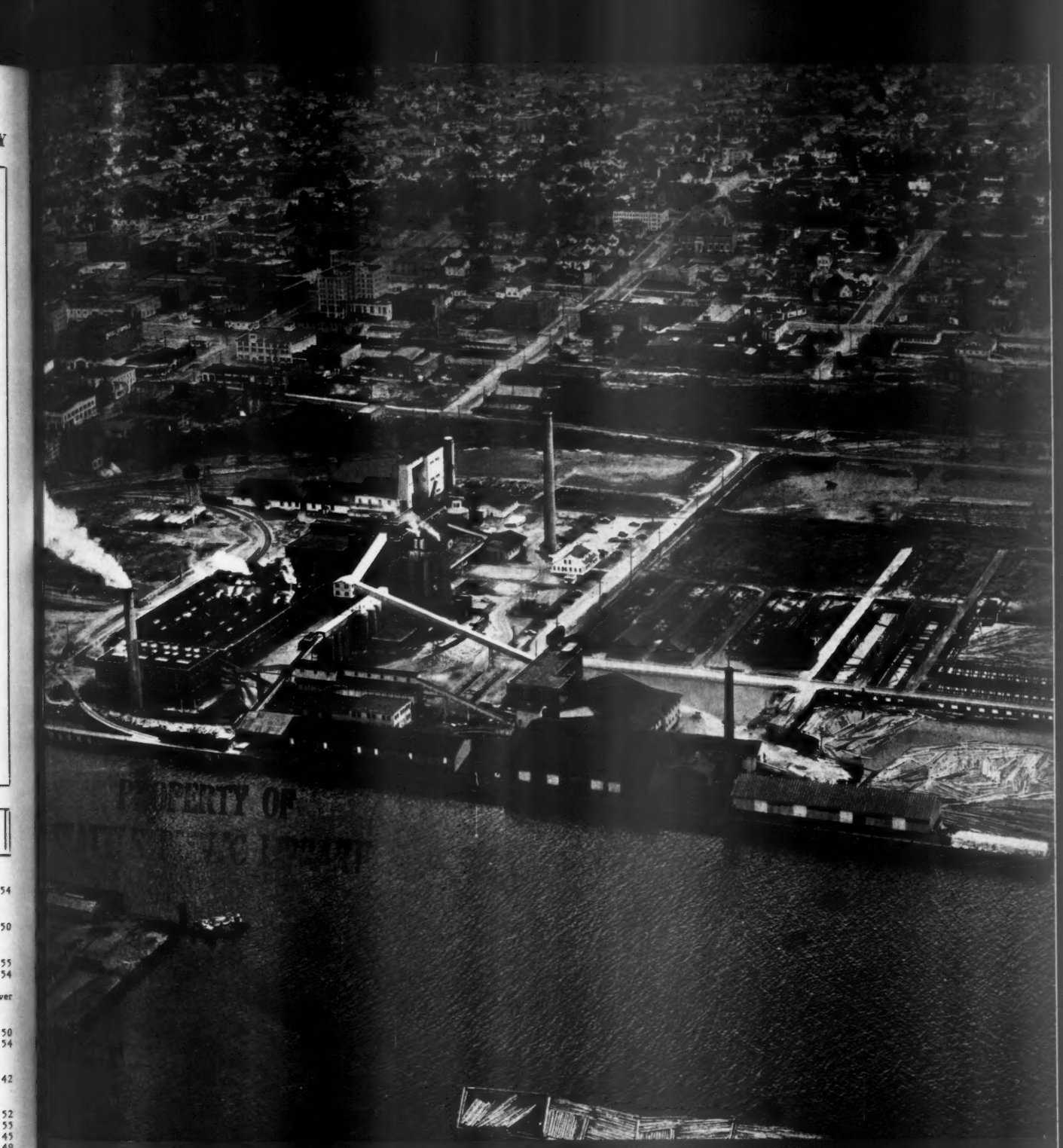

Pacific Pulp & Paper Industry

Vol. 15 • No. 7 JULY 1941

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Paper Demand Continues-- Pulp Shortage Expected

Maintenance of paper and board production at capacity together with increased demands for wood pulp by defense industries has reduced stocks almost to zero.

• "Paper production has continued to expand at a constantly increasing rate since the first of the year and during the month of May established a new all-time high," reports the American Paper & Pulp Association.

"Most mills are currently operating at practical capacity, with backlogs for the industry as a whole equivalent to approximately five weeks' operation. During May paper mills operated at 99.2 per cent of capacity compared with 96.4 per cent for April and 90 per cent for May of 1940.

"Orders received for May were 112.2 per cent of capacity, exceeding 100 per cent for the third consecutive month. For the fifth consecutive month shipments have exceeded production with the result that stocks on hand at mills are at the lowest point reached in several years.

"The continued high level of general business activity, together with the record order backlogs under which the industry is operating indicates, or in fact almost guarantees, a continuation of the current high levels of production through most of the remainder of the year."

The Wall Street Journal on July 10th, reported a pulp shortage has actually developed. Quoting:

"The shortage of wood pulp for paper manufacture, first threatened when war broke out in Europe in September, 1939, has now developed.

"Only the voluntary agreements of producers of some grades of pulp with the Office of Price Administration and Civilian Supply have prevented a runaway market in papers and paperboard.

"These agreements do not cover all divisions of the industry, and on some grades of paper prices have soared far above a year ago.

"All paper and paperboard production is dependent directly or indirectly on the pulp supply. Most paper is made entirely from new wood pulp, although some waste paper, which in effect is re-used pulp, is used in paper production. Most of the several million tons of waste paper consumed annually goes into paperboard production.—

"With the paper industry operating at over 100 per cent of capacity, the United States pulp industry cannot supply all the sulphite pulp required. It has been estimated by industry statisticians that an approximate balance between demand and maximum supply would exist with the industry operating at 92.5 per cent. As this rate has been exceeded consistently for several months, a real shortage is in the making.

"This trend is confirmed by declining stocks of wood pulp at mills and on docks. Mill stocks are not uniform. Some manufacturers have ample stocks for many months; others are in desperate need of additional supplies to maintain production, although to date there have been no mill shut-downs for lack of pulp.

"Records of stocks of wood pulp at docks do not run back many years, but the stocks in January, 1936, are generally considered to be normal. The dock stocks are now under the figure which prevailed at that time. Dock stocks rose sharply in 1939, eased off toward the end of that year, and rose again to approximately 320,000 tons in April, 1940. They were down to less than 80,000 tons on June 1st of this year. This means that in addition to the pulp produced over the past 14 months, some 240,000 tons were drawn from stock.

"Any forced curtailment of paper production because of a shortage of sulphite pulp would be felt throughout most of the industry. Sulphite pulp is used in almost every division, either as bleached or unbleached pulp. It goes extensively into the production of printing papers, of magazine type paper, into wrapping paper and into many other uses. It would also effect the production of paperboard.

"It is probable that some of the present record demand for paper represents stocking up by ultimate consumers. This is believed to be particularly true of printing papers, but it is probably not the case on wrapping paper or paperboard.

"In the latter two instances, demand has probably been so heavy

that it has required all of the greatly increased purchases by consumers.

"It would not require any considerable let down in demand to bring the pulp supply again into balance with consumption. However, while the summer months normally show a considerable decline in the use of paper, it is not likely that such a development will occur this year.

"As far as imports of pulp are concerned, the United States is no worse off now than it was a year ago. Even then, imports had fallen off to negligible amounts, and while they have since declined even further, the loss from a year ago is small. As compared with 1939, however, there is a serious loss of tonnage for the industry.

"In April, for the second time this year, no pulp came into the United States from overseas. Great Britain has now stopped issuing navicerts on Finnish pulp, and Finland has been the only overseas country to send any pulp to the United States this year. The last month in which a normal amount of pulp was brought into the United States from Scandinavia was February, 1940. Some in the industry believe it will be two years after the end of hostilities abroad before Europe will again be a factor in the pulp market here.

"Imports of all grades of wood pulp into the United States in the first four months are compared in the accompanying table:

"Despite the expanded rate of exports of wood pulp from Canada to the United States, therefore, the United States received 298,000 tons less pulp this year than last, and 203,000 tons less than in the first four months of 1939.

"Exports of wood pulp from the United States have risen as compared with last year. For the first four months of 1941 they amounted to 139,420 tons against 114,568 tons a year ago."

Country:	1941	1940	1939
Finland	9,089	56,756	82,813
Norway	.....	17,190	24,500
Sweden	.....	276,243	204,755
Other overseas	.....	5,800	27,108
Total overseas	9,089	355,989	339,176
Canada and Newfoundland	303,328	248,191	166,453
Total	312,417	604,900	505,629

Additional Demands for Pulp

• Additional demands upon North American pulp producers are in the offing as the defense effort gains further momentum. With smokeless powder production skyrocketing the available supply of cotton linters will apparently be absorbed entirely in the manufacture of this essential product together with large tonnages of dissolving wood pulp. The Hercules Powder Company has just announced that the production of smokeless powder in its own and plants it operates for the Federal government is ten times this month what it was in July, 1940, and adds significantly that it will be doubled again by September.

Dissolving bleached sulphite and unbleached that can be converted satisfactorily into chemical cellulose will be in increasing demand not only for defense purposes directly but indirectly as a replacement of cotton linters now used in lacquers and plastics. It is reported that the acetate rayon producers, long experimenting with dissolving wood pulp, will be forced to use it exclusively due to the loss of their linter supplies.

Then, too, the regular buyers of dissolving pulp, the producers of viscose rayon filament yarn and staple fiber are buying every pound they can obtain to keep their plants running at top speed. Details of the rayon situation are given elsewhere in this issue.

If paper production should drop back to the 92.5 per cent of capacity at which point it is in theoretical balance with the North American pulp supply, it is most probable that there would be no actual balance in supply and demand, the new markets for pulp upsetting the earlier calculations.

Pulp Production

• The United States Pulp Producers Association production data as reported in the May Monthly Statsitical Summary of the American Paper & Pulp Association, states that bleached sulphite pulp production for the first quarter of 1941 was 386,763 tons as compared with 388,863 tons in the first quarter of 1940, a decline of 2,100 tons (100 per cent of the industry reporting). Stocks on hand at producing mills at the end of the first quarter this year amounted to 38,217 tons as compared with 60,811 tons at the end of the first quarter a year ago. And, by the end of May this year stocks were down to 32,895 tons.

Unbleached sulphite pulp production during the first quarter of this year, 95 per cent of the production being reported, aggregated

COMPARISON OF WOOD PULP IMPORTS

Four Months 1940 and 1941

(Tons of 2000 Pounds)

Type of Pulp	Finland		Norway		Sweden		Canada		Other Countries		Total All Countries	
	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
Mechanical Unbleached	1,226	.....	.....	.....	8,530	.....	45,533	47,819	.....	.....	55,289	47,819
Unbleached Sulphite	21,019	4,573	1,646	.....	120,739	.....	58,201	80,954	4,562	.....	206,167	85,527
Bleached Sulphite:												
Rayon & Special Chemical Grades	.....	.....	.....	.....	.....	.....	38,099	33,336	.....	.....	38,099	33,336
Other	9,763	779	10,822	.....	17,535	.....	61,971	80,702	1,211	.....	101,302	81,481
Unbleached Sulphate	23,445	3,076	4,722	.....	105,890	.....	22,348	35,503	.....	.....	156,405	38,579
Bleached Sulphate	1,303	661	.....	.....	23,549	.....	19,189	20,808	.....	.....	44,041	21,469
Soda	.....	.....	.....	.....	.....	.....	3,569	4,206	.....	.....	3,569	4,206
Total	56,756	9,089	17,190	.....	276,243	.....	248,910	303,328	5,773	.....	604,872	312,417
Per Cent Change, 1941 over 1940		—83%	.....	.....	.....	.....	.....	+21.8%	.....	.....	.....	—48%

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

254,961 tons, a gain of 42,535 tons over the production in the first quarter of 1940 of 212,426 tons. Mill stocks at the end of the first quarter this year were 24,475 tons as against 30,359 tons at the end of the same period a year ago, but they declined to 22,487 tons at the end of May this year.

Bleached sulphate production during the first quarter this year, 100 per cent of the productive capacity reporting, amounted to 164,004 tons as compared with 118,929 tons in the first quarter of 1940, a gain of 45,075 tons. Stocks on hand at producing mills were 4,945 tons at the end of the first quater this year as against 7,851 tons a year before, and 6,049 tons at the end of May this year.

Unbleached sulphate production of 824,271 tons during the first quarter of the current year was 134,337 tons larger than the 689,934 tons produced in the first quarter of 1940 (95 per cent of the industry reporting). Stocks on hand at producing mills increased being 41,697 tons at the end of the 1941 first quarter as compared with 9,164 tons at the close of the first 1940 quarter, but by the end of May this year they had dropped to 21,137 tons.

Soda pulp production as reported by the Soda Pulp Manufacturers Association for 95 per cent of the productive capacity, amounted to 130,078 tons during the first quarter of the present year as against 120,993 tons a year ago, a gain of 9,085 tons. Stocks at producing mills were 6,741 tons at the end of the first 1941 quarter as against 6,244 tons a year before, rising to 6,971 tons at the close of May, 1941.

Charles Belvin Called To Active Army Duty

● Charles H. "Cholly" Belvin, for several years Pacific Coast representative for the Chromium Corporation of America with headquarters in Portland, was called to active duty with the Army on June 30th.

Mr. Belvin was a captain in the infantry reserve but upon being called to active duty was transferred in grade to the Air Corp. He was assigned to the 38th Bombardment Group, General Headquarters Air Force, Jackson Air Base, Jackson, Mississippi. Mrs. Belvin and their two children are still living in Glens Falls, N. Y., but expect to join him in Jackson in the near future.

Several months ago the Chromium Corporation placed Mr. Belvin in charge of the New England and Northern New York territory in addition to the Pacific Coast. At that time he moved his home to Glens Falls, N. Y.

Captain Belvin will be glad to hear from his friends on the Pacific Coast.

Alpha Cellulose Corporation Formed in California

Plans to Produce Alpha Cellulose from Cotton Seed Hulls and Other Agricultural Waste

● A new California corporation, the Alpha Cellulose Corporation, has been formed to manufacture alpha cellulose under patents held by A. M. Thomsen.

The company, which has leased an unused sugar beet plant at Corcoran, California, expects to operate first on cottonseed hulls and later on other San Joaquin Valley wastes, selling entirely to major cellulose consumers, under contract, without general sales organization.

It is proposed to issue 100,000 shares for an exclusive license on the process and for an option to purchase the Corcoran plant, and to sell 100,000 shares to provide for equipment installations and working capital.

The company's prospectus states that the Thomsen process is not a new development but one perfected after years of research. The Thomsen process using simple chemicals, salt and lime, at a relatively low temperature and with a pressure of 12 to 15 pounds against 125 pounds typically used on wood pulp, enables the inexpensive use of cottonseed hulls and other farm waste materials, states the prospectus.

It is pointed out that the inventor, A. M. Thomsen, has had long experience in both organic and inorganic chemistry in a wide variety of fields.

"The location for the first alpha cellulose unit at Corcoran is ideal, being in the heart of a huge cotton, barley, and flax producing area, all of which produce a satisfactory waste raw material for use in the plant. It is planned to establish other units in California areas where raw materials are available in sufficient quantities, so that eventually a substantial part of California waste farm products will be converted into useful and valuable products to supply the ever-increasing demands.

The company has a lease for one year, with an option to purchase, on the sugar beet factory at Corcoran, together with approximately 33 acres of land. The building is of reinforced concrete construction containing about 44,000 square feet of floor space.

The prospectus says that due to the simplicity of the process, no special equipment is necessary. It is expected that all the equipment can be made at the factory or purchased from machinery and equipment dealers in the San Joaquin Valley.

Officers of the company are W. H. Young, who makes his headquarters at 58 Sutter street, San Francisco; Edward J. Haug, vice-president; W. D. Shea, Jr., secretary, treasurer, and attorney; Elmer C. von Glahn, director; J. B. Boyett, director; Orville D. Adams, director; C. J. Collins, director; and A. M. Thomsen, consulting chemist and technical adviser.

Mr. Young states that the company will soon be setting up equipment and it expects to start turning out alpha cellulose by the middle of September.

"We also intend to put in a paper machine next spring," said Mr. Young, "and produce linen paper."

Jack Barton Awarded Institute Scholarship

● Jack Barton, son of Mr. and Mrs. Everett H. Barton of Longview has recently been granted a scholarship to continue graduate work for his doctorate degree at the Institute of Paper Chemistry in Appleton, Wisconsin. He was graduated from the Lower Columbia Junior College in 1938, majoring in chemistry and graduated from the University of Washington two years later. During the past year he has been doing graduate work on a scholarship at the Institute.

His father Everett H. Barton, is associated with the Pulp Division, Weyerhaeuser Timber Company, Longview, Washington.

M. W. Hedden A Coast Visitor

● M. W. Hedden, chemical engineer with the Racquette River Paper Company of Potsdam, New York, was in the Pacific Northwest the middle of July visiting the sulphite mills and renewing old friendships.

Mr. Hedden left the Pacific Coast in 1927 after about 15 years with the Crown Willamette Paper Company at Camas and West Linn. At the time he left for the East he was sulphite superintendent at West Linn and prior to holding that position he served as a chemist.

Driving west through Canada, Mr. Hedden stopped at Banff and Lake Louise and visited friends at Yakima before arriving in Seattle. Expecting to be away from the mill a month or more, Mr. Hedden planned to drive to Los Angeles before heading East again.

Announce Personnel Changes at Ocean Falls

● A number of important changes in the executive personnel of the Ocean Falls plant of Pacific Mills, Ltd., have recently been announced.

F. A. Drumb, formerly resident manager of the Ocean Falls plant is now located at the executive offices of Crown Zellerbach Corporation in San Francisco. Mr. Drumb is to be directly associated with Albert Bankus, vice president in charge of manufacturing; and A. R. Heron, director of industrial and public relations.

Mr. Drumb started to work for Crown Willamette Paper Company at Camas in November, 1927. Previous to that time he was with the Consolidated Water Power & Paper Company in its Wisconsin mills and also at Thunder Bay Paper Company, Port Arthur, Ontario, which was at that time a Consolidated Water Power & Paper Company mill. He worked at Camas from November, 1927, until May, 1933, when he went to Ocean Falls as resident manager.

Mr. Drumb has managed the Ocean Falls mill since 1933. During this period many important developments have taken place in the equipment, capacity and products of the plant.

● R. H. R. Young, who became assistant manager at Ocean Falls in 1935 succeeds Mr. Drumb as resident manager there.

Mr. Young started out his paper making career at Swanson Bay Pulp Mill, Swanson Bay, B. C., and went to Ocean Falls nearly 20 years ago. He was employed at various work around the mill, including several years on the paper machines. He left Ocean Falls to enter Oregon State College, where he completed his work and received a degree in mechanical engineering.

During his vacation periods at school he worked first at Ocean Falls and later at West Linn, and on completion of his school work entered the employ of the West Linn mill. He worked up to the position of assistant resident manager there, before leaving in 1935 to go to Ocean Falls as assistant manager.

As a result in the changes of personnel at Ocean Falls, James Petrie has now been made assistant resident manager. He completed his schooling at the University of British Columbia and after a few years in the logging industry went to Ocean Falls, working in the sulphite mill and later in the technical control department. He was made technical supervisor three years ago and became assistant to the manager in September, 1940.

● With the departure of Hugh M. Lewis from Ocean Falls, Wm. E. Locke has been appointed plant engineer there. Mr. Locke completed his engineering training at the University of British Columbia where he was prominent in athletics.

He has had quite a borad engineering experience in construction work, being employed throughout Canada by the Northern Construction Company. He went to Ocean Falls in 1934, working in several different departments, including the office, but later joined the engineering staff, where he has continued until his promotion.

● Howard Wright, formerly employed by the British Columbia Electric Company at Vancouver, B. C., has become associated with the Ocean Falls plant of Pacific Mills, Ltd., as electrical foreman.

Mr. Wright completed his studies and received his degree in electrical engineering at the University of British Columbia. During his vacations while attending the university he worked on the electrical staff at the Ocean Falls mill. Mr. Wright moved his family to Ocean Falls and is now settled there.

● In the number of changes which have been made in the Ocean Falls organization, Matt A. Haslett now assumes the responsibility of townsite manager. He is a pioneer of Ocean Falls, having served as one of the contractors in the construction of the paper mill buildings. He later took over the responsibilities of yard and waterfront foreman, carrying on these activities since the time the paper mill started in 1917 until the present time.

He has also served as harbor master during that time—a government position. During Mr. Haslett's long residence in British Columbia he has been an active leader in the Liberal Party, having held responsible positions in the organization.

Mr. Haslett's active participation in public affairs and his long association with construction activities, together with his geneial personality, make him particularly well suited for his new duties.

● Mr. Haslett is succeded as yard and waterfront foreman by James Barton, formerly foreman for the Empire Stevedoring Company in Vancouver, B. C. Mr. Barton plans to move his family to Ocean Falls in the near future.

● In the changes made at Ocean Falls, the hotel, formerly operated as a department of the townsite, is now made an independent unit with A. S. James in charge. Mr. James has been assistant manager of the hotel for a number of years and in addition to his practical experience he has had well grounded theoretical experience in hotel management.

Hugh M. Lewis, former plant engineer, is leaving the company to join the Wallace Shipyard Company, in charge of one of its new yards at Vancouver, B. C. He came to Pacific Mills, Ltd., from the Provincial Paper Mills, Port Arthur, Ontario, in 1929. While at Pacific Mills he served in the capacity of assistant general superintendent and was later promoted to be plant engineer.

Eleven Camas Men Called Into Service During June

● Eleven employees of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, were called into service in the army or navy, between June 4th and June 30th.

These men are listed with their former position and, in some cases, their present address, as follows:

Herbert C. Morse, Jr., baler in number one finishing room; Herbert Herman Hansen, toilet rewinder operator in the converting plant; Donald M. Platt, engineering department, now second lieutenant at Camp Roberts, California; John Roland Asher, cook's helper in sulphite mill; Keith R. Balentine, miscellaneous labor; Ivan L. Crawford, yard laborer, now with Company B, 1st Q.M.Tr. Regt., Fort Francis E. Warren, Wyoming; Ralph Strickler, office clerk; Eugene R. Brundage, yard laborer; Clifford L. Pratt, yard laborer; Patrick I. Donnelly, yard laborer, now petty officer in reserves at Bremerton navy yard; and Lawrence Ogle, job pressman in the printing department.

Lynn Robertson Wins Camas Golf Tournament

● Crown Willamette Golf Association's annual spring tournament at Camas, Washington, was completed about the first of June. Results of the fifth and final round, which determined the winner and runner-up in each of the five 16-man flights, were as follows:

Champion flight, Lynn Robertson, winner and Lynn Morgan, runner-up;

First flight, Jim Galloday, winner and Art Lethlean, runner-up;

Second flight, John Roberts, winner and Bruce Dobbs, runner-up;

Third flight, John Tilden, winner and Lester Schatz, runner-up;;

Fourth flight, C. H. Smith, winner and Brian Kibbee, runner-up.

Spring rains slowed up the tournament, but the Orchard Hills golf course, where the match was played, has remained in good condition.

The handicap committee included John Roberts as chairman, Tom Martin, Jim Butterick, Harold Tuttle and Forest Williams.

Two Weyerhaeuser Men Take Wives in June

● Les Anderson, screenroom foreman, Longview Mill, Pulp Division, Weyerhaeuser Timber Company, Longview, Washington, was married to Mis Gunborg Rockstad at the home of the bride's parents in Anacortes June 14th. The bride and groom toured California and Nevada on their honeymoon and are now residing in Longview.

A. F. Erickson, chemist in the control laboratory, Longview Mill, Pulp Division, Weyerhaesuer Timber Company Longview, Washington, married Miss Dorlesca Buell on June 14th. A two-week honeymoon was spent traveling in Washington, British Columbia and visiting the Yellowstone National Park. Mr. and Mrs. Erickson have a home in Longview .

Niles Anderson Elected Vice President of Superintendents

● The superintendents on the Pacific Coast were honored at the annual meeting of the American Pulp & Paper Mill Superintendents Association at Poland Springs, Maine, late in June, by the election of Niles M. Anderson, general superintendent of the St. Regis paper Company, Kraft Pulp Division, Tacoma, as fourth vice president of the national association. Mr. Anderson succeeds L. S. McCurdy, paper mill superintendent of the Port Townsend Division, Crown Zellerbach Corporation, who resigned his vice presidency because of ill health.

Mr. Anderson is chairman of the Pacific Coast Division of the Superintendents Association. Accompanied by Mrs. Anderson he attended the annual meeting at Poland Springs, flying East following the joint meeting of the Pacific Coast Division with TAPPI in Portland, June 6th and 7th.

Doherty Called to Active Naval Duty

●Unusual honor has come to Fred B. Doherty, Naval Reserve officer and formerly with Rayonier Incorporated, at Shelton, Washington. Holding a commission as a Lieutenant, junior grade, in the Reserve, he has been called to active duty for instruction in the Naval War College.

Doherty has had an excellent record as a Reserve officer, and showed early aptitude at the University of Washington when, as an NROTC officer, he won the Ziegmeier Memorial Award (sword and belt) for proficiency in ordnance and gunnery. His peace-time assignment in the Reserve was to the 5th Fleet Division, 13th Naval District.

From 1933 until being called to active duty he was chemist and later night superintendent at the Shelton plant.

West Linn Horseshoe Club Holds Annual Meeting

● The annual field meeting of the West Linn, Oregon, chapter of the Horseshoe Club was held June 18th at Simmonds park on Milk creek. This is the parent chapter of the Horseshoe club, a secret organization of Crown Willamette Paper Company foremen, which was organized some forty years ago, when the foremen held annual meetings at Wilhoit mineral springs.

Johnny Rauch, yard foreman of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, West Linn and A. N. Nicolai, manager of West Linn Inn were initiated into the organization. Members participated in the sports of pitching horeshoes and three innings of softball. Clarence A. Enghouse and Johnny Reams were captains of the softball teams.

OPERATING MEN of the HAWAIIAN CANE PRODUCTS, LIMITED, Hilo, Hawaii, producers of insulating board from bagasse . . . Left to right, W. F. GOLDSMITH, Vice President in Charge of Production; C. W. MASON, Superintendent; and S. H. Cha, Chemist.

This snapshot was made by Fred C. Shaneman, Vice President of the Pennsylvania Salt Mfg. Co., of Washington, Tacoma, early in May, while on a business trip to the Islands. The board mill is reported operating at full capacity.

Rayonier Reports Record Year In Production, Sales, Profits and Taxes

Produced 216, 510 tons of dissolving pulps, 111,625 tons of paper pulps and 19,032 tons of paper in fiscal year ending April 30, 1941—Net profit of $4,005,871 highest since $3,-124,703 in 1938—Taxes of $4,137,500 equivalent of $1,600 for each employe

RAYONIER INCORPORATED, world's largest producer of dissolving wood pulps with four mills in Washington and a fifth in Fernandina, Florida, reports that its past fiscal year, ending April 30th, was a record one from every standpoint, production, sales, profits and taxes.

In the report, released July 10th, Rayonier Incorporated reported a consolidated net profit of $4,005,871 after all charges including depreciation, depletion, interest, loss of $177,461 on plant retirement and federal income and excess profits taxes totaling $3,350,000. This is equivalent to $2.86 a share on 963,871 shares of common after regular preferred dividend requirements, and compared with a consolidated net profit of $2,389,-488 after all charges for the preceding fiscal year, equivalent to $3.81 a share on 626,205 shares of $2 cumulative preferred stock on which unpaid dividends totaled $2.67 a share as of April 30, 1940. The 1940 fiscal year net profit equaled $1.18 a share on the common after one year preferred dividend requirements.

Dividends paid during the fiscal year just ended amounted to $2,817,922, against $626,151 the preceding year. Aggregate of last year's payments was equivalent to $4.50 a share on the preferred stock, which cleared all accruals and placed the issue on a current dividend basis. In the 1940 fiscal year $1 a share was paid. No dividends were paid on the common stock during the last fiscal year, but on June 2, 1941, a common distribution of 25 cents a share was paid.

Record Earnings Achieved

● Record earnings were achieved despite the imposition of heavy federal taxes, which aggregated $3,550,000 in 1941, against $497,876 the preceding year. Total tax bill, including payments on any accruals to federal, state and local governments, was approximately $4,137,500, equivalent to $4.29 per share of common stock, or to about $1,600 per employe based on average number during the year. In addition, it was stated that there is an unmeasured amount of taxes included in cost of all materials purchased by the company. The company's profit before federal income taxes was $7,555,871 in the fiscal year just ended, against $2,887,364 the preceding fiscal year.

Indicated net profit for the final quarter ended April 30, last, was $973,918, equivalent to 69 cents a share on the common, compared with $892,844 for the preceding quarter, equivalent to 60 cents a share on the common and with indicated net profit of $964,295 for the final quarter of the 1940 fiscal year.

Debt Reduction Program Described

● Consolidated net sales for the year were $25,154,297, against $16,292,047 for the preceding fiscal year, a gain of $8,862,250 or 54.4%. Unit sales of all products totaled 341,830 tons compared with 254,779 tons, an increase of 87,051 ton or 34.2%.

Describing progress toward debt reduction, Edward M. Mills, president, said: "As part of its program toward maintaining a sound financial condition, the company has accelerated the payment of its long-term loans. During the past fiscal year the long-term loans were reduced $1,500,000. An additional $500,-000 of the loans were prepaid as of May 16, 1941. This paid all maturities to and including February 1, 1943, and left $4,500,000 outstanding. Of this amount, $1,000,000 bears interest of 2½% per annum, and the balance of $3,500,000 bears interest of 2¾% per annum."

With regard to operations and markets, Mr. Mills continued: "The company's new mill at Fernandina, Florida, operated continuously throughout the fiscal year at or near capacity rate, as did four mills in the state of Washington. This was the first full year of operation of the Fernandina mill. Its output was a considerable factor in the company's increased total production.

"The year was characterized by continuing good demand for dissolving pulps as well as for paper grade pulps. In fact, the demand for paper grade pulps of domestic manufacture was greater than ever before in the history of the domestic industry. This condition reflected in part the continued restrictions on exports of pulps from Scandinavian countries, and in part the increased rate of activity in the domestic paper industry.

European Markets Closed

● "During recent months, markets in Continental Europe and the Far West have been virtually closed to the company due to the intensified war conditions as affecting those areas. Consequently, the company's foreign business currently consists chiefly of sales made to customers in England and certain other parts of the British Empire, and in South America. Meanwhile, the domestic demand for the company's products is such as to tax its ability to fill orders despite the fact that all mills are continuing to operate at capacity rate."

Due largely to heavy tax accruals, the current asset position of the company was impaired somewhat although working capital showed a nominal gain. Balance sheet as of April 30, 1941, shows total current assets of $10,007,745, incuding cash of $3,869,975, and current liabilities of $5,058,878, indicating working capital of $4,948,867, and a current asset ratio of about 2 to 1. A year earlier current assets aggregated $7,-067,022, including cash of $932,428, and current liabilities of $2,744,604, leaving working capital of $4,322,418, and a current asset ratio of 2.57 to 1. Inventories stood at $4,191,516 on April 30, 1941, compared with $3,559,230 a year earlier.

Independently audited consolidated income account of Rayonier Inc. for the year ended April 30, 1941, compares as follows:

	1941	1940	1939
Sales	$25,154,297	$16,292,046	$10,049,431
Cost of sales & oper. exp.	14,809,805	11,016,426	7,196,851
Operating income	$10,344,492	$ 5,275,620	$ 2,852,580
Other income (net)	75,039	9,682	3,392
Total income	$10,419,531	$ 5,285,302	$ 2,855,972
Depreciation	1,484,549	1,271,286	1,095,074
Depletion	61,984	51,101	52,583
Sell, admin. & gen. exp.	826,021	748,031	*
Interest and amortization	253,786	320,572	266,392
Projects abandoned	54,091		12,368
Loss on retirements	177,461		6,685
Miscellaneous expense	5,768	6,949	6,946
Normal income taxes	1,825,000	497,875	239,277
Excess profits tax	1,725,000		
Net profit	$ 4,005,871	$ 2,389,488	$ 1,176,647

*Not shown separately.

Independently audited consolidated balance sheet of Rayonier Inc. and its wholly owned subsidiary, Georgia Timber Co., as of April 30, 1941, compares as follows:

RAYONIER EXHIBITS CUSTOMERS' PRODUCTS in the company's New York reception room ... The attractive ten-foot walnut show cases are divided into two sections each, one displaying products made from RAYONIER'S dissolving pulps and the other for articles made from all or part furnish paper and specialty pulps ... The exhibits are changed twice a year and sent to Rayonier's Fernandina, Florida, mill office where a similar show case is maintained.

In order to give all rayon customers an equal opportunity to display to the best advantage products made from their yarns, RAYONIER has adopted a policy of offering a complete section of one show case to two dissolving pulp customers each Spring and Fall.

The section of Southern pine represents 20-years' growth ... In the top picture, on the left, is shown the steps in making bleached sulphite pulp from wood while on the right are the processing steps from RAYONIER'S HICOLOR pulp to viscose rayon. Below this are the processing steps in making cellulose acetate, ethyl cellulose, urea resin phenolic resins and at the bottom finished plastic products.

Shown here are paper products made by the BRYANT PAPER CO., AMERICAN WRITING PAPER CORP., W. C. HAMILTON & SONS, INC., SUTHERLAND PAPER CO., S. D. WARREN CO. ... The plastic products were made by the MONSANTO CHEMICAL CO., GENERAL ELECTRIC CO., and the BAKELITE CORP. ... The rug sample contains a percentage of staple fiber and the blanket is 88% staple fiber in which dissolving pulps were used.

The bottom photograph shows a grouping of colorful crepe and sheer pastel fabrics made of NORTH AMERICAN RAYON yarns and a series of photographic views of the INDUSTRIAL RAYON CORPORATION'S continuous spinning process against a background of maroon satin made of this company's yarns.

ASSETS	1941	1940	1939
Cash	$ 3,869,975	$ 932,428	$ 2,768,089
Accounts and accepts receivable	1,946,254	2,575,364	1,106,008
Inventories	4,191,516	3,559,230	2,091,744
Timberland sa'es conts. receivable	----------	----------	60,565
Total current assets	$10,007,745	$ 7,067,022	$ 6,026,406
Employee loans	25,049	25,600	26,100
Foreign customers' deposits (contra)	94,398	----------	----------
Investments, cost or less	11,797	11,239	11,239
Prop. plant and equip.	20,978,467	21,723,126	15,352,927
Construction in progress	321,746	511,955	6,135,114
Land used for plant	425,836	419,015	407,155
Timberlands & timber, net	1,599,075	1,469,851	1,484,393
Contracts, options, etc.	21,600	21,600	21,600
Deferred charges	140,519	280,204	219,128
Total assets	$33,626,232	$31,529,612	$29,684,062
LIABILITIES			
Notes payable to banks	----------	$ 600,000	$ 750,000
Timberland purch. obligations	$ 165,000	63,217	63,217
Accts. payable & acc'd. exp.	1,338,293	1,227,786	800,943
Foreign customers' deposits	----------	356,101	----------
Provision for income tax	3,555,585	497,500	235,000
Total current liabilities	$ 5,058,878	$ 2,744,604	$ 1,849,160
Term notes payable to banks	$ 5,000,000	$ 6,500,000	$ 7,250,000
Foreign customers' deposits (contra)	94,398	----------	----------
Deferred timberland purch. obligations	----------	----------	63,217
Preferred stock (626,205 shares)	15,655,125	15,655,125	15,655,138
Common stock ($1 par)	963,871	963,871	963,872
Capital surplus	2,809,109	2,809,109	2,809,109
Earned surplus	4,044,851	2,856,903	1,093,566
Total liabilities	$33,626,232	$31,529,612	$29,684,062

Note.—Company contingently liable for principal and interest on bonds of City of Port Angeles Municipal Water Works Elwha River Extension in amount of $670,140, also $44,000 4½% City of Hoquiam Industrial Water Revenue Bonds.

The Report

The report is presented in most attractive form with a cover illustration of the office and mill at Shelton, Washington, the company's first pulp mill and also the first in which dissolving pulps were produced.

A photograph in natural colors of rayon cloth in various colors and patterns serves as the frontispiece and is captioned, "Rayon made from wood pulp has brought to the Textile Industry great opportunities in the manufacture of new cloths. The fabrics illustrated were manufactured from rayon yarn produced by one of Rayonier's customers.

Other photographs show pulpwood logs in storage at Shelton, a pulp finishing room with the sheet pulp being bailed in hydraulic presses, and a series of six Kodachrome photographs of the company's forestry operations in Florida and Georgia for the purpose of supplying the mill at Fernandina, Florida, with wood in perpetuity.

Charts show United States Rayon Production from 1931 through 1940; Gross Sales of Rayonier Incorporated from 1932 through the fiscal year 1941; Pulp and Paper Production of Rayonier Incorporated from 1932 through the fiscal year 1941; and, the Net Profit of Rayonier Incorporated from 1932 through the fiscal year 1941.

The report is printed on white laid text paper produced by W. C. Hamilton & Sons of Miquon, Pennsylvainia, from 100 per cent furnish of Rayonier's Raybrite pulp.

Rayonier's Growth

● When viewed in table form the growth in Rayonier's annual production of both dissolving and paper grades of wood pulp is most impressive. The accompanying table is reproduced from the 1941 annual report.

Production Statistics

Fiscal Year End Apr. 30	Diss. Pulp Tons	*Paper Grd. Pulp-Tons	Paper Tons
1932	32,567	76,717	12,751
1933	48,349	24,674	10,887
1934	66,068	75,019	16,766
1935	101,302	47,661	14,132
1936	108,462	56,045	16,653
1937	135,716	48,479	17,978
1938	204,125	21,761	15,204
1939	83,828	27,695	16,296
1940	195,834	49,369	18,944
1941	216,510	111,625	19,032

*Exclusive of pulp used by the Company in the production of paper.

The growth in sales, taxes and net earnings is also impressive. These are shown in the accompanying table.

Recent Trends in Rayon

● Under this heading the Rayonier Incorporated annual report had the following to say:

"A continued increase in the domestic production of rayon has characterized the current year. During the first quarter of 1941 the production of rayon filament yarn totaled 106,200,000 pounds. This is a new high quarterly record and is 11 per cent greater than the production in the first quarter of 1940. The domestic production of rayon staple fiber also established a new high quarterly record at 25,000,000 pounds, which is an increase of more than 22 per cent over the first quarter of 1940.

"The sustained upttend in the domestic production of rayon reflects not only its increasing importance in the apparel field, but also its growing use in the manufacture of rugs, blankets, draperies and other household goods, and its penetration into industrial fields. Some interesting developments in the use of rayon in tires recently were reported by the Rayon Organon, publication of the Textile Economics Bureau, Inc., as folows:

● 'Since the introduction of the rayon cord tire several years ago, much emphasis has been put on its use for heavy-duty service, i.e., tires for buses, trucks and other heavy commercial vehicles. But the rayon cord tire for passenger cars also has been enjoying increasing popularity for some time, as evidenced by one of the largest automobile tire manufacturers recently bringing out a new line of rayon cord tires for this service. This company is the fourth manufacturer to have a passenger car rayon tire in its line. It is claimed that the rayon tires offer longer mileage, greater safety and higher resistance to deterioration by heat.

'The aircraft industry is also providing a new market for rayon cord tires. It was recently announced that, in recognition of the strength and safety of rayon cord tires, they are to be used by the United States Army for its new eighty-two-ton Douglas B-19 super bomber. According to reports, three especially designed rayon cord tires are to be used on this ship. The two main tires measure 8 feet each in diameter, while the nose tire measures 4½ feet. Each of the larger tires contains nearly 150 miles of rayon cord'."

Tree Farming

● Rayonier Incorporated is intensely interested in growing trees to provide wood for its mills on a permanent yield basis. This policy of tree farming is being fully developed on the company's lands in Georgia and Florida. In the 1941 annual report the following statement is made concerning forestry.

"Forestry is defined by the U. S. Forest Service as 'the handling of forest land in such a way that it will raise repeated crops of timber and will exert to the fullest the beneficial influences of the healthy forest on soil and stream flow, on wild life and human life.' Obviously, it is to the advantage of everyone to derive the greatest possible benefit from these natural resources, the forests, and to conserve them so that there will be assurance of a continuous and adequate supply of timber and the products for which it serves as a raw material. These facts have not always been fully recognized. In the old days, the forests of the United States were looked upon as being inexhaustible. Little or no care was exercised in the cutting of timber, or in its protection from fire and other destructive agencies. In fact, in many cases forests were delibertely burned to make way for farm land and for other reasons. Efforts toward reforestation—the growing of new timber—were meager. During the present century, however, there has been an increasing consciousness on the part of owners of timberlands in the United States, both public and private, of the necessity for proper forestry practices. Forestry has become a science, and reforestation has become an important part of the activities of more and more owners and users of timber. Careless and destructive practices have not been eliminated, of course, but there is a strong trend in the direction of their elimination.

"Rayonier Incorporated is among the private owners of timberlands in the

United States which have established, and are pursuing, comprehensive programs of reforestation. The Company's activities are being conducted on its properties in Florida and Georgia, which supply wood for the Fernandina mill. On the Pacific Coast, where somewhat different conditions prevail with respect to wood supplies, the Company so far has found it more advantageous to purchase logs from others than to engage in large-scale woods operations for its own account.

"The Company's program in Florida and Georgia involves a long-range plan of rehabilitation, protection, and reforestation, designed to place and maintain the properties on a sustained-yield basis. In addition to the work being done on its own properties, under the direction of Mr. A. G. McArthur, who is also president of the Board of Forestry of the State of Florida, the Company is making considerable headway in promoting the idea of forestry among neighboring land owners, and is cooperating with such owners in planning and carrying out programs pertaining to their properties.

"In the conduct of its forestry activities the Company takes account of the fact that the primary objective of any commercial forestry program is to obtain the greatest possible return from the properties involved, as measured by the yield of timber of suitable type and quality. The methods employed in accomplishing this result basically are similar to those employed in the growing and harvesting of other crops. In other words, broadly speaking, the activities consist of the conditioning and maintenance of the forest lands, the propagation of new crops of trees and their protection, and the harvesting of "ripe" or mature timber. The harvesting is done in such a way that the young, immature trees are disturbed as little as possible, and the forest is left in a condition which will promote reseeding and new growth. If conditions are such that this reseeding will take place as a result of the natural distribution of seeds from large, mature trees, a sufficient number of these trees, suitably located, is left standing. If it is desirable to completely clear the land, due to the condition of the standing timber, the subsequent reforestation must be by artificial means, entailing the planting by hand of young trees transplanted from natural stands or grown from seed in forest nurseries.

"Sometimes it is necessary in order to achieve thrifty growing stands of suitable timber in virgin forests, to conduct thinning operations, removing trees which are not satisfactory from the standpoint of type or quality, and those which are too close together to permit vigorous growth. It is necessary at all times to protect the forest, young or old, against fire and other destructive agencies such as insects, rodents and disease, and such protection represents a large part of any forestry program.

"According to statistics compiled by the U. S. Forest Service, approximately 15 per cent of the total timber removed annually from commercial forests in the United States is removed by fire and other destructive agencies. This compares with approximately 5 per cent cut for pulpwood, 27 per cent for fuel wood, 40 per cent for lumber, and 13 per cent for all other useful purposes.

"The forest fire problem is somewhat more serious in Florida and Georgia, and in the South generally, than in other parts of the country, and its solution consequently requires relatively greater efforts along prevention and control, as well as along educational lines. Thus, fire protection is and will continue to be, for a number of years, one of the most important undertakings in Rayonier's forestry program.

"The results of the Company's program to date have been satisfactory, and have demonstrated beyond question, that it is both possible and highly desirable to operate these timberlands on a basis which will make for permanency and stability, factors which are important not only to the owners and users of timber, but to the communities which are dependent, in whole or in part, upon forest industries:"

Camas Paper Festival July 24-26th

● The second annual Paper Festival at Camas, Washington, is to be held July 24th, 25th and 26th, with a full program of sports, music, parades and entertainment. One of the main features of the opening night will be the coronation of the festival queen. The five contestants for queen are June Catherine Cox, sponsored by Papermakers union; Frances Mae Province, candidate of clerks union and the American Legion; Winifred Shirley Smith, candidate of the paper mill office; Leah Mildred Parsons, sponsored by the Washougal community and Mary Christine Province, candidate of the service clubs.

Other attractions of the festival include open house at Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, the dedication of Crown park, softball tournament, Vancouver Motorcycle club stunt show in conjunction with a Camas fire department exhibition, a sanctioned outboard regatta in the Columbia river off the new port dock, grand parade, golf tournament and dancing.

Frank Collins is chairman of the paper festival committee and Charles Witt, Jr., is executive secretary. Other committees and members are: advertising and publicity, Milton Bona, chairman; Decorations, Lyle Bolton, chairman, Glen Farrell, director, and Sylve De Wiesse, assistant director; entertainment, Velton Davis, chairman; dances, Al Green, director; Clyde Johnson and John Ostenson as assistant directors; water sports, Ed Barthelemy, director, Fritz Tietz and Harold Blake, assistant directors; Golf tournament, Herbert Wymore, director; Softball tournament, Bud Estes, director; Motorcycle exhibition, Chester Olson; Firemen's exhibition, Lawrence Beauchamp, who is also chairman of the Finance committee.

Queen contest, Lamont Lucas, director, Douglas R. Whittier, Bart Tidland and Robert Heatherington, assistant directors; Carnival, Chris Peters, director, R. T. Van Alstine and Clifford Wise, assistant directors; Industrial exhibits, Charles Witt, Jr., chairman, William Fritz, director, Chris Peters and Syve De Wiesse, assistant directors; Paper Mill open house, Paul Millard, chairman, Charles Witt, Jr., director; Parade committee, Arthur W. Jones, chairman, Harry Wyatt, director, C. E. Freeman, Frank Blake, Norval Reeder and Clifford Koplin are assistant directors; Junior parade and junior queen contest, Frank Hooper, director, Zaidie Enos, assistant director; Bands, Wayne Moffatt, director.

Reception and hospitality, Mayor H. J. Woodworth, chairman; Visiting officials, B. L. Daily, director; Traffic and parking, Free Lee, director; Reception quarters, W. B. McClean, director; Information, Charles Witt, Jr., director; Theme girl, Marjorie Temple and Official photographer, Wallace Vail.

Powell River's New Dam Ready This Month

● Power from the new $1,000,000 dam built by Powell River Company at Lois River to replace the temporary log crib will be cut into the company's hydro-electric system during the coming month.

Construction, carried out by Stuart Cameron & Company, has been about four months ahead of schedule and the entire job will probably be completed before the end of the year.

Earnings of Rayonier Incorporated and Combined Earnings of Predecessor Companies

Fiscal Year Ended April 30th	Gross Sales	Profit Before Charges	Interest and Amortization	Other Charges Net	Federal Income Taxes	Net Profit
1932	$ 6,645,327	$ 594,142	$357,383	$130,124	$ 6,968	$ 99,667
1933	4,634,743	187,145*	323,553	159,482	23,810	693,990*
1934	8,535,584	1,351,046	303,654	40,263	147,237	859,892
1935	10,420,569	2,083,392	286,423	184,518	219,533	1,392,918
1936	11,393,137	2,449,607	256,665	39,020	298,585	1,855,337
1937	13,278,021	3,130,407	243,570	143,094	500,422	2,243,321
1938	17,496,025	4,182,299	246,330	189,609	621,657	3,124,703
1939	10,049,431	1,704,923	266,392	22,607	239,277	1,176,647
1940	16,292,047	3,205,202	320,572	2.733*	497,875	2,389,488
1941	25,154,297	7,971,937	253,786	162,280	3,550,000	4,005,871

*Denotes red figures.

Puget Sound's Timely Expansion Provides Needed Unbleached Sulphite Pulp

Expansion program to be completed in August raises annual capacity from 100,000 tons to 170,000 tons, partially alleviating shortage in U. S. supplies estimated at close to 300,000 tons this year—Bellingham mill, with daily capacity of 470 tons, is now the largest unbleached sulphite pulp mill in the world.

THE latest expansion of the Puget Sound Pulp & Timber Company's unbleached pulp mill at Bellingham, Washington, is a most timely one for it brings increased capacity into operation at a moment when it is badly needed by the paper mills of the Western Hemisphere.

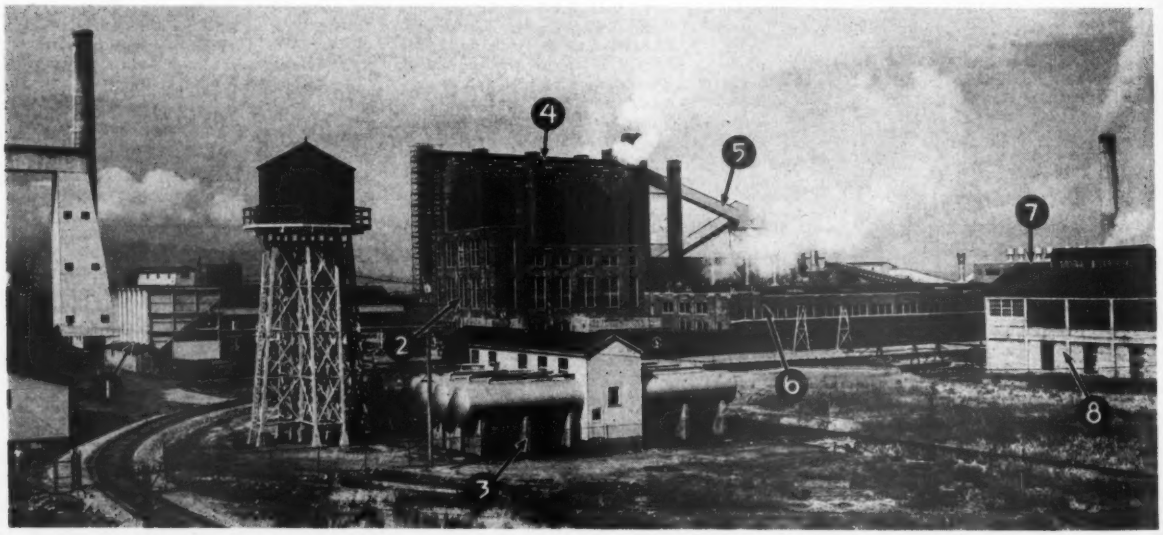
The timeliness of Puget Sound's expansion is clearly shown by the following statement from the "Monthly Report on The American Pulp & Paper Industry" for May, 1941, issued by the U. S. Department of Commerce.

"The problem regarding availability of pulp supplies which several months ago was considered pressing, particularly in the unbleached chemical grades, apparently still exists. Total domestic demand for unbleached sulphite during 1941 will reach 1,604,000 short tons, according to the Office for Production Management. At the production rate of the first four months of 1941, plus imports during the same period, total unbleached sulphite available to meet these requirements, exclusive of that held in stock, will be 1,347,000 tons —a "deficit" of approximately 300,000 tons. At the rate of the highest output of unbleached sulphite in any of the first four months of 1941 and the highest imports during the first three months of 1941, total unbleached sulphite available for domestic consumption in 1941 would reach approximately 1,465,000 tons. With rising paper consumption, it is felt that there may be a definite shortage of particular grades of this type of pulp before the year's end. * * *"

The American paper industry is still operating at close to 100 per cent capacity and at a time of year when normally business would be slack. This unusually high rate of production is preventing the accumulation of any stocks whatsoever and is steadily reducing the inventory of Scandinavian pulp built up early in 1940 by the consuming mills.

Besides this continued pressure on domestic pulp producers signs of future increased demand for wood pulp are becoming apparent. With cotton linter requirements for munitions expanding it is expected that the producers of cellulose acetate rayon yarns and plastics will have to depend almost entirely upon wood pulp, which up to the present has been used to a very small degree in this process.

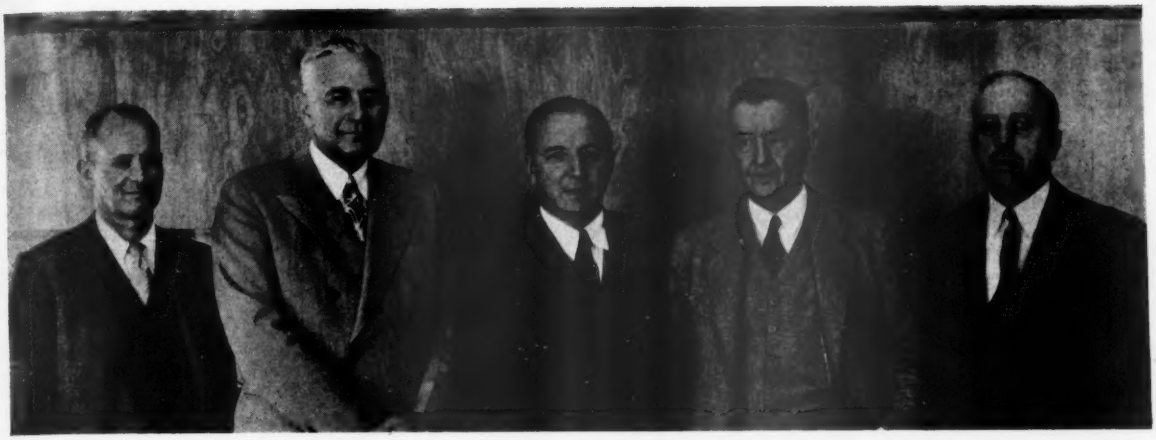
With estimates of consumption requirements of defense industries being revised upward almost weekly



A ground view of he enlarged unbleached sulphite pulp mill of the Puget Sound Pulp & Timber Company at Bellingham, Washington. No. 1, chip storage for the original plant, Mill A, which is outside the picture at the left; No. 2, the rifflers, screens, washers and machine stock chests are housed in this building; No. 3, the pressure type water filter plant built in 1939 and doubled this year to 16,000,000 gallons per day capacity.

No. 4, Mill B digester building housing six digesters (the new part extends to the left from the arrow); No. 5, chip conveyor from chipping plant to chip storage over the digesters (chips for Mill A carry over the top of this building and drop down a pipe at the left end to another belt conveyor to storage at No. 1).

No. 6, the new drying machine building, large enough to house two new machines although but one was installed. This side of it is the depressed railroad siding facilitating car loading. No. 7, the enlarged steam generating plant. No. 8 shows one end of the main building of the Pacific Coast Paper Mills, manufacturers of tissues.



Executives of the PUGET SOUND PULP & TIMBER COMPANY, Bellingham, Washington ✓ ✓ ✓ Left to right, HAROLD D. CAVIN, Consulting Engineer; RALPH M. ROBERG, Sales Manager, OSSIAN ANDERSON, President; WALTER DeLONG, Operating Manager; LAWSON TURCOTTE, Secretary-Treasurer. ERIK EKHOLM, Superintendent, was out of the city at the time this picture was taken.

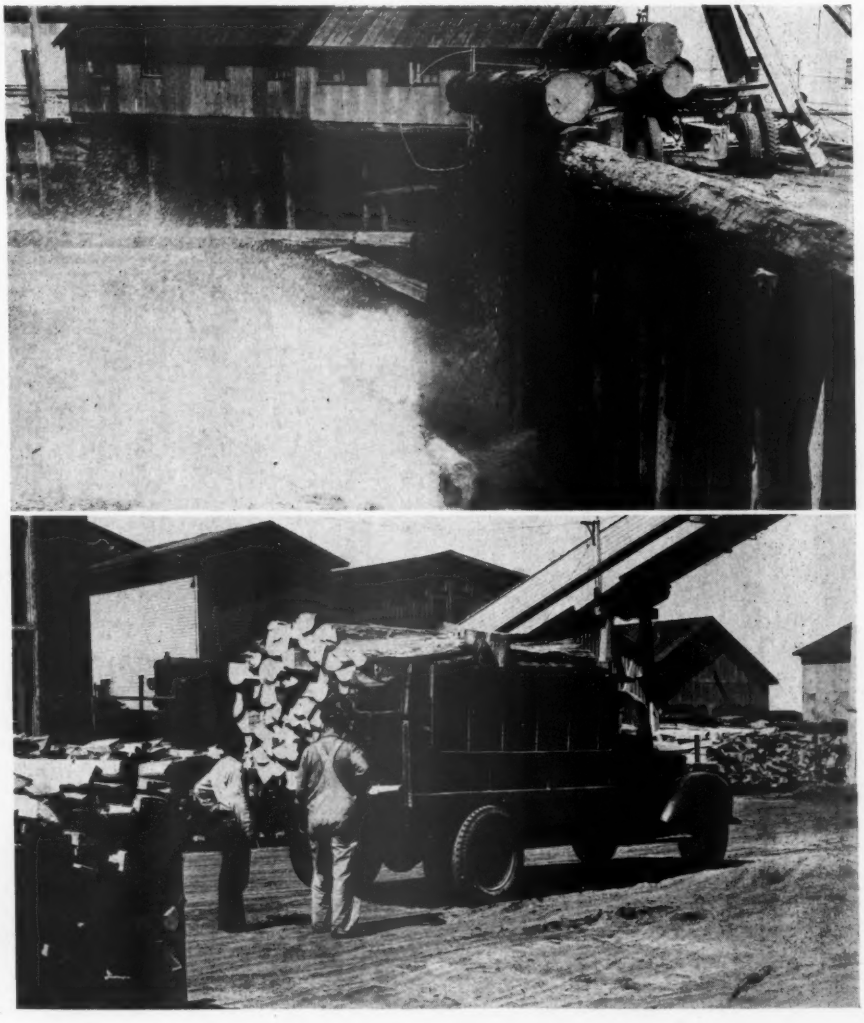
it is reported that the linter supply will be insufficient and that the bleached sulphite pulp industry will be called upon in September to furnish around 8,000 tons of pulp for nitrocellulose production with the requirements increasing to 15,000 tons per month by December. This will place the bleached sulphite industry in a short supply position with the paper and rayon mills continuing to run at capacity.

It is evident that the supply situation in both unbleached and bleached sulphite will grow tighter as the defense effort gathers momentum. Although the increased productive capacity of the Puget Sound Pulp & Timber Company at Bellingham, will not by any means eliminate the shortage in unbleached pulp, it is a most important contribution to our national defense efforts for the company will furnish an extra 50,000 tons during 1941 and 70,000 tons annually thereafter above its 1940 rate of 100,000 tons.

Shortage Foreseen

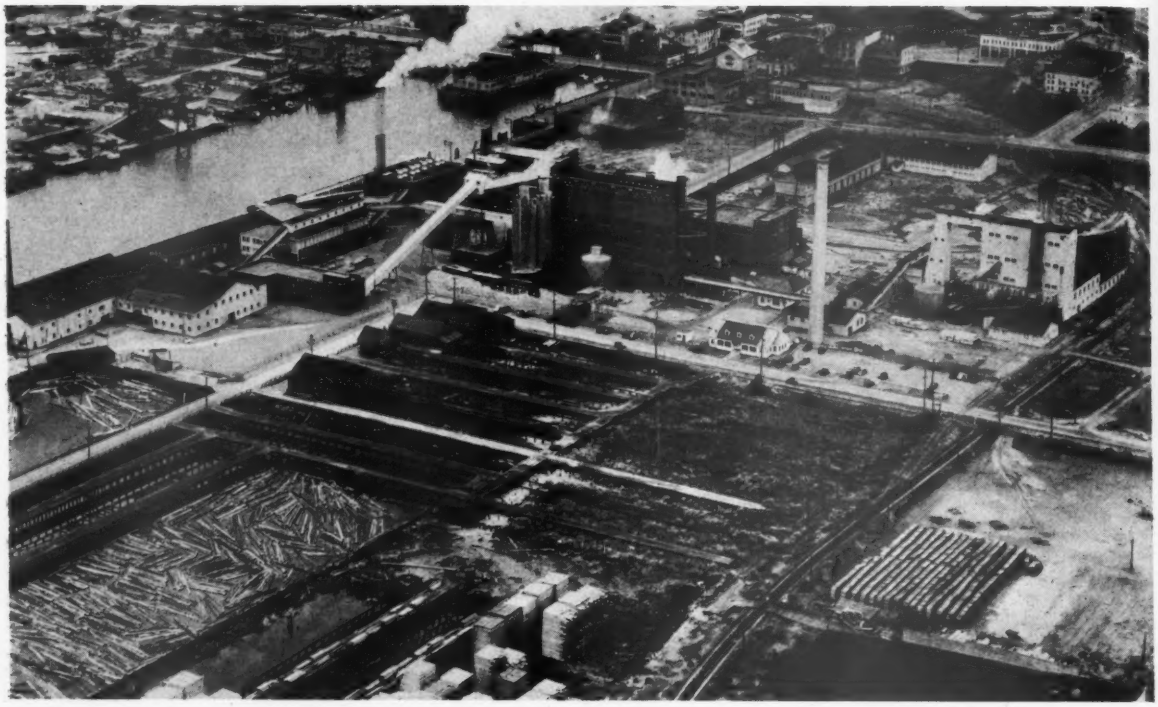
● This shortage of unbleached sulphite pulp was foreseen a year ago by Mr. Ossian Anderson, president of the Puget Sound Pulp & Timber Company. In a letter to the company's stockholders dated August 22, 1940, Mr. Anderson said in part:

"At a meeting of the board of directors of the company, held August 9, 1940, the board approved a plan for the construction of an additional unit to the Bellingham pulp mill having an estimated capacity of 50,000 tons of unbleached sulphite pulp annually. The present capacity of the Bellingham mill is 100,000 tons annually. The construction of the proposed addition will increase

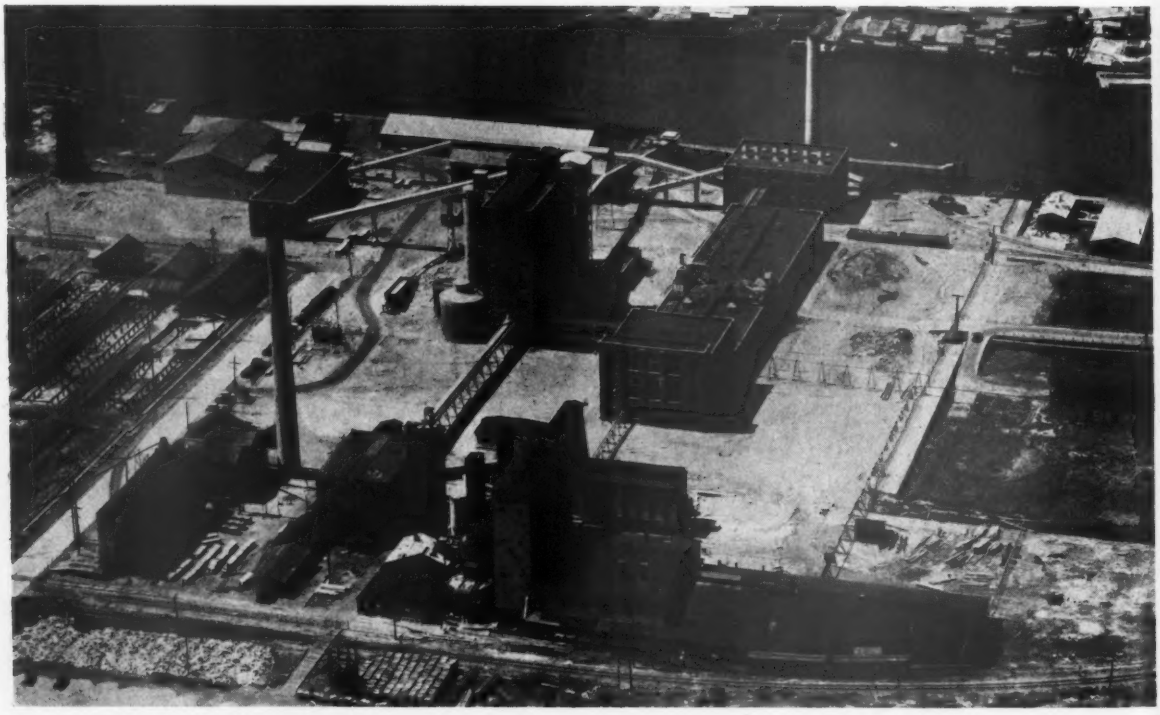


How the Puget Sound Pulp & Timber Company's mill at Bellingham receives its wood supply. At the top, logs are brought in by truck and dumped into the pond (logs also arrive by water and by train). In the center, a farmer brings in a truck load of barked cordwood and the wood buyer looks it over.

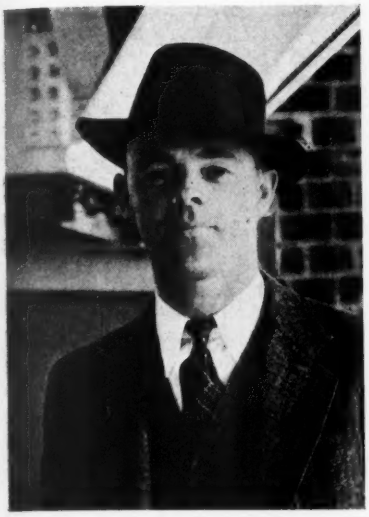
Aerial Pictures Show Puget Sound's Growth



The Mill in July 1941--



The Mill in July 1938--



ERIK EKHOLM. Superintendent, Puget Sound Pulp & Timber Co.

the capacity of the plant to the ultimate output for which partial provisions were made in the original construction in 1938.

"The decision to recommend the construction of this additional unit is based on the following factors:

"(a) An excellent market, both foreign and domestic, is now enjoyed by the company, and it is the belief of the management that a strong demand for this particular grade of chemical pulp will continue through 1941 owing to a world shortage which has developed in spite of reduced consumption in some of the warring countries. This world shortage has been brought about in part by lack of any new construction of unbleached sulphite pulp mills in the last two years, by curtailment or elimination of production in Finland, and by increased cost of transportation from the Scandinavian countries, which, together with blockades, has virtually eliminated any substantial shipments from these large producers, forcing shutdowns and drastic reduction in normal world supply and inventories.

"(b) It is the belief of the management that even an immediate cessation of hostilities and eventual peace treaty, transportation costs from the Scandinavian countries will remain high for at least one year until the demand on shipping tonnage is reduced or new ship construction can replace some three million tons of cargo vessels lost thus far during the hostilities by all nations.

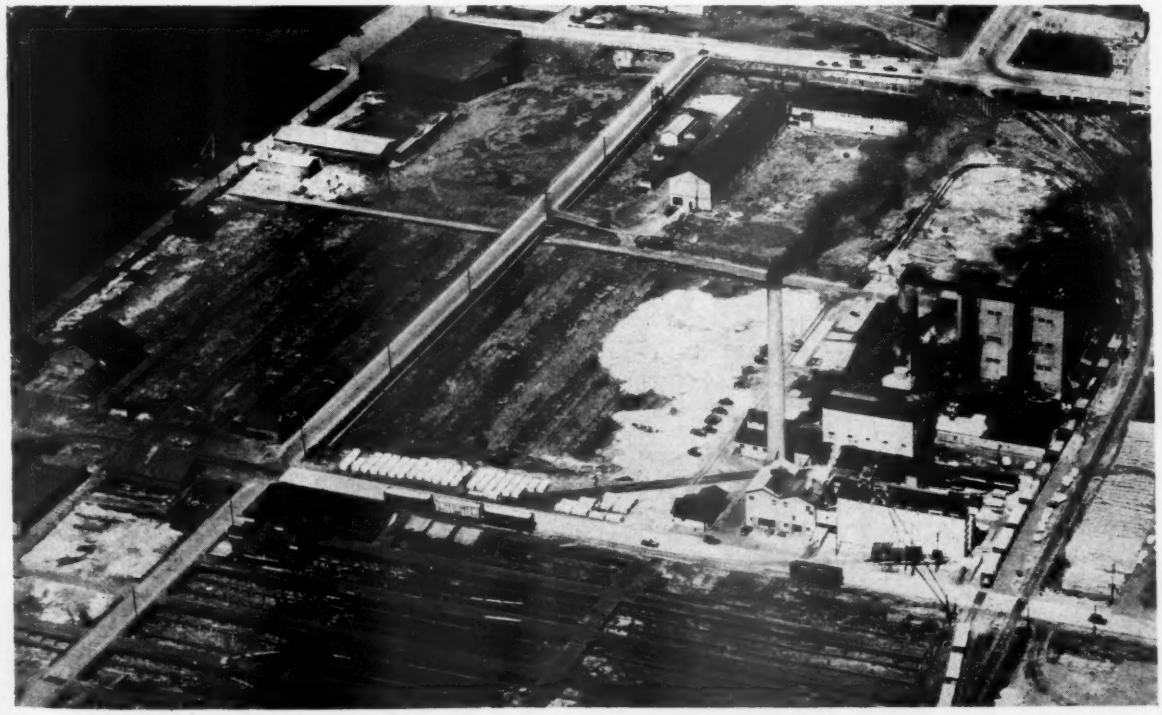
"(c) The above factors will keep freight rates to our markets above pre-war levels and will thus tend to enable American producers to supply the American markets without having to meet such competition as was experienced immediately prior to the Russo-Finnish war.

"(d) In the opinion of the management, a peace in Europe will mean that European countries will require large quantities of pulp, which demand will, for some time, consume all or a major portion of the productive capacity of the Scandinavian countries, especially in view of the fact that it will take the Scandinavian countries some time to reach capacity operations due to interruptions in wood-cutting and disruption of transportation.

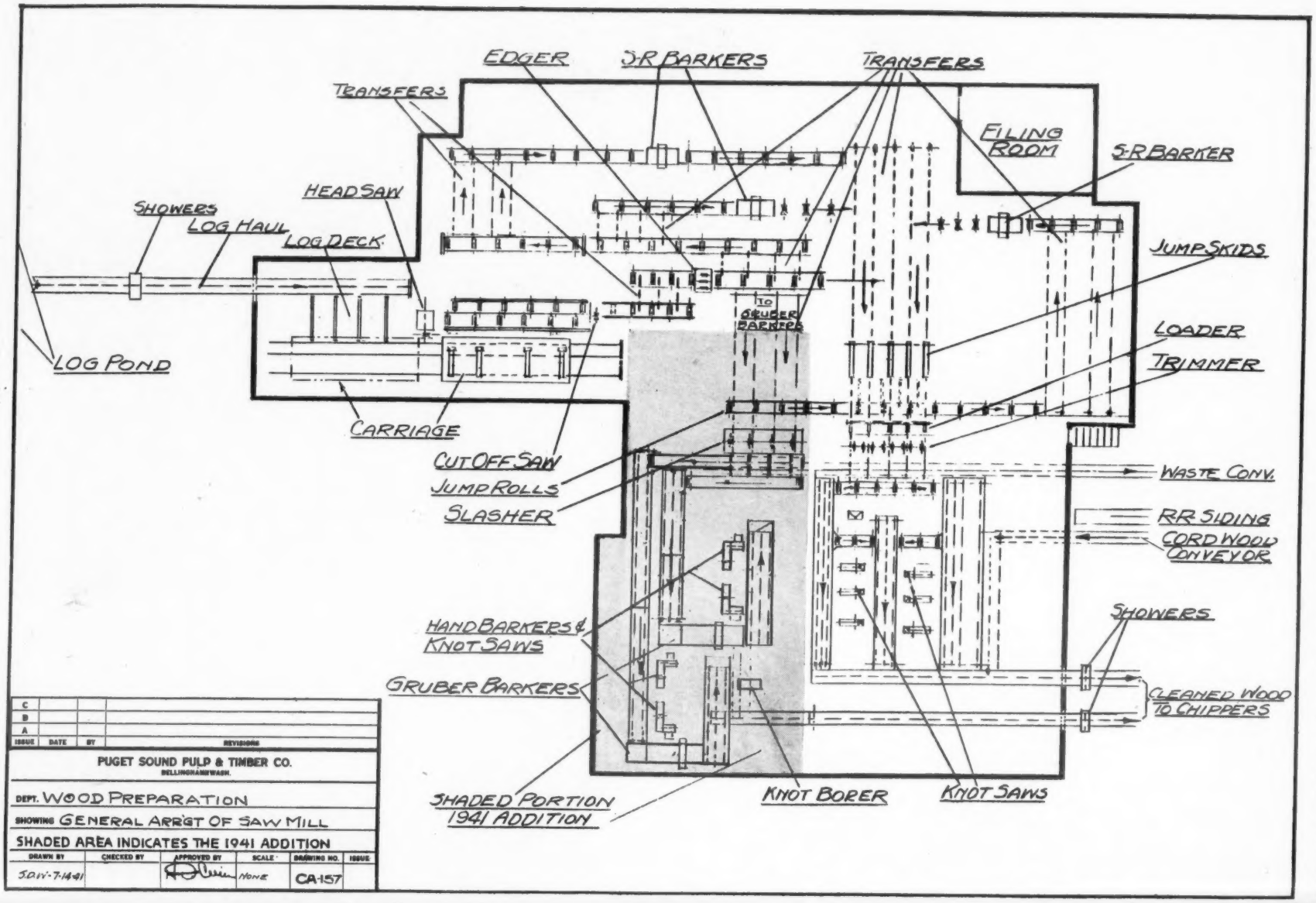
"(e) With a reasonably assured market for the new output—in fact, an opportunity to contract for its sale in advance at profitable prices—the management feels that the benefits to be derived, in the form of lowered cost of production and quick retirement of the cost of the added unit from its own earnings, will greatly enhance the company's earning capacity and security. * * *"

The common stockholders met in Bellingham on September 9, 1940, approved the new addition and construction begun September 17th with the driving of piles for the new machine room and digester building.

The original plan of adding two new digesters was altered early in this year to three, thereby raising the daily capacity from 270 tons to 414 tons and finally to 470 tons, and the annual capacity from 100,000 tons to 150,000 tons on the basis of



The Mill in July 1937--



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PUGET SOUND PULP & TIMBER CO.
BELLINGHAM WASH.

DEPT. WOOD PREPARATION

SHOWING GENERAL ARR'GT OF SAW MILL

SHADED AREA INDICATES THE 1941 ADDITION

DRAWN BY	CHECKED BY	APPROVED BY	SCALE	DRAWING NO.	ISSUE
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two new digesters, to 170,000 tons on the basis of three new digesters. Installation of the first two was completed early in April of this year and the third will go into production the first week in August.

Financing

● To finance the expansion of the Bellingham mill the Puget Sound Pulp & Timber Company arranged to borrow up to $1,500,000 from the Bank of America, National Trust & Savings Association of San Francisco on unsecured promissory notes, with maturity dates from July 1, 1941, to January 1, 1946. The loan was arranged in ten installments of from $112,500 to $200,000 each, payable semi-annually starting July 1, 1941, at interest rates of from 3 to 4½ per cent, the interest rate to move upward one-half of 1 per cent each year until reaching 4½ per cent with the July 1, 1944, installment.

Prepayment could be effected at any time without premium from net earnings or moneys derived from the sale of capital assets. Prepayment of notes from moneys received from any source other than the above could be effected at any time at a premium of 2% for prepayment in 1941 or 1942, and decreasing ½ of 1% each year thereafter until reaching ½ of 1% in 1945.

As the Puget Sound Pulp & Timber Company sold to the Scott Paper Company its small unbleached sulphite pulp mill at Anacortes, Washington, in September, 1940, for $425,000, cash, it was not found necessary to borrow the entire $1,500,000 arranged for. A total of $925,000 was borrowed with the first note maturing January 1, 1943.

History

● The Puget Sound Pulp & Timber Company is a pioneer Pacific Coast producer of unbleached sulphite pulp. It was incorporated in April of 1929 to acquire certain properties including the unbleached sulphite pulp mill of the San Juan Pulp Manufacturing Company in Bellingham (now Mill A), and the unbleached sulphite pulp mill of the Fidalgo Pulp Manufacturing Company in Anacortes, Washington. The sale of this latter plant was effected November 15, 1940, to the Scott Paper Company of Chester, Pennsylvania. Ossian Anderson, president of the Puget Sound Pulp & Timber Company, was president of both San Juan and Fidalgo companies at the time of the merger.

The mill at Anacortes was completed late in 1925, operated 54 days that year and produced 859 tons of unbleached sulphite pulp in shredded form. The following year the mill at Bellingham started and at the time of the merger and formation of the Puget Sound Pulp & Timber Company the two plants were producing a total of 40,000 tons of pulp per year.

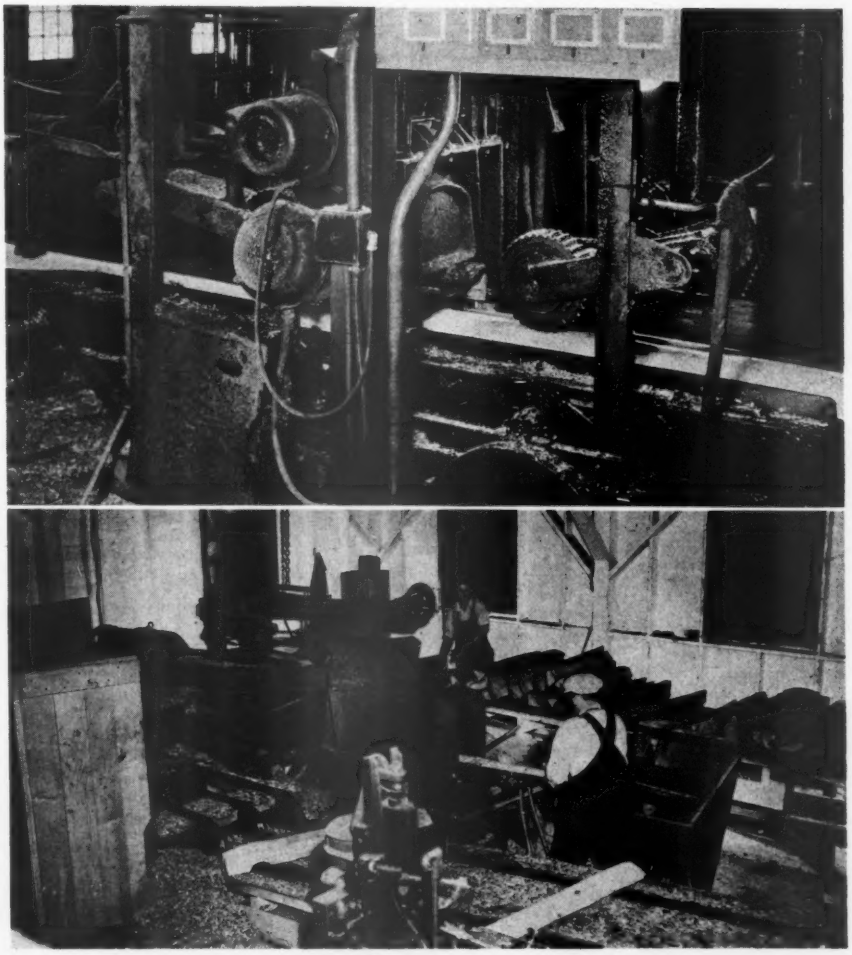
In the spring of 1937 the directors of the company laid plans for the construction of a new and modern unbleached sulphite pulp mill capable of producing 40,000 tons or more annually and so designed as to permit economical expansion up to a maximum of 170,000 tons annually. The possibility of bleaching was taken into consideration and the plans so made that a bleach plant may be added at any time it may be desirable.

In making the plans for the new mill in 1937 to be called Mill B, the essential equipment in Mill A (the original plant) was retained. This included the chip storage, the four digesters, the accumulator, the knotters, the flat screens and the washers. The chipping, the acid making, the drying and the steam generation were all transferred to the new mill.

● A site was acquired adjacent to the company's original mill, the arrangements were made with the City of Bellingham for additional water supplies and the general construction contract was let on September 14, 1937. It had been planned to place the new mill in operation the latter part of March, 1938, but the decline in the demand for pulp made the fast schedule unnecessary and as a result construction was not completed until May 15th of that year.

To finance the construction of Mill B, the Puget Sound Pulp & Timber Company issued through the Bankamerica Company of San Francisco, as underwriters, 125,000 shares of 6 per cent convertible preferred stock, which provided $2,500,000 for the building of the mill.

The officers and directors of the



The large cants are barked by Stetson-Ross cant barkers while the slabs and edgings are cleaned in a Gruber barker.

Puget Sound Pulp & Timber Company are: Ossian Anderson, president and director; H. M. Robbins, vice president and director; Lawson Turcotte, secretary-treasurer; Robert H. Evans, director and legal counsel; William C. Keyes, director; Ralph H. Miller, director; J. L. Rucker, director; and Fred G. Stevenot, director.

The operating manager of the company is Walter DeLong, who has been associated with the mill operations since 1929.

The superintendent of the Bellingham mill since 1929, Erik Ekholm, is a graduate of the Swedish Technical University at Katrineholm, Sweden, and his operating experience has been gained both here and abroad.

Chief chemist is E. O. Ericcson, a graduate in chemical engineering from the University of Washington. Mr. Ericcson has been associated with the company's Bellingham mill since 1935.

The expansion now being completed was planned and supervised by consulting engineer Harold D. Cavin of Bellingham, whose operating and construction experience has been gained in several Pacific Coast mills and in the South. The building of Mill B in 1937-1938 was carried on under the supervision of the engineering firm of Cavin, Marshall & Barr.

The New Producing Unit

● When the construction of Mill B was reported in a 19-page story in the July, 1938, issue of PACIFIC PULP & PAPER INDUSTRY, it was stated that:

"In designing the new unit it was the aim of the engineers to evolve a simple and efficient plan capable of being expanded at a later date into a mill as much as four times larger in producing capacity than the first unit. It will be noted from a study of the aerial photographs that these aims were accomplished although the problem was complicated by the necessity of tying in several departments of the new plant with Mill A. (Now that the expansion is completed the aerial pictures accompanying this article, taken in 1937-1938 and 1941, show how advance planning simplified the expansion program.)

"The new mill includes sufficient capacity in the first unit to provide chips, steam acid, stock chests and drying for the original mill now called Mill A, or capacity in these departments to produce a total of 235 tons of pulp daily." (When Mill B was placed in operation it was found that the combined capacity of Mills A and B was actually 270 tons daily.)

"The engineers paid attention to architecture in designing the buildings which possess a functional beauty not ordinarily found in industrial plants. The principal buildings are of steel and the new dual brick which possesses the advantages of higher insulating value and greater speed in laying due to the larger size. Insulation is obtained by air pockets in the brick."

The sulphur silos and the acid towers were again in the latest expansion program, constructed of reinforced concrete by the slip-form method.

Production Flexibility

● An interesting and important point to note in the design of Mill B, is its production flexibility in connection with Mill A. Mill A, with its four original digesters and Mill B, with its six digesters, are separate cooking systems and can be so operated if it is not desired to handle them as a unit.

Either one or two types of unbleached sulphite pulp can be cooked at the same time. When Mill B was built the advantages of separate cooking were kept in mind and provisions made to keep two types of pulp separate knotting, riffling, screening, washing, storage and drying.

The conveyor system installed in 1938 when Mill B was built was of adequate capacity for the enlarged mill. No. 1, the chip conveyor from the chip screens to storage over the digesters. No. 2, the three new concrete sulphur storage silos with belt conveyor extending to the dock for rapid unloading from ship or car.

No. 3, the hogged fuel storage building. No. 4, hogged fuel return conveyor from boilers back to storage. No. 5, hogged fuel conveyor from storage to boilers. No. 6, the electric substation serving all of the mill except the log breakdown and chipping plant. No. 7, shows the No. 1 blow pit with its vomit stack.

Wood Preparation

● The Puget Sound Pulp & Timber Company obtains its wood from logs or cordwood. Logs come by truck, rail and water. Cordwood is bought from farmers or pulpwood contractors who truck it into the mill.

The log breakdown plant, which contributes the greater part of the wood for chips, is the former Morrison Mill Company's sawmill pur-

chased in 1936 and rearranged for pulp mill use.

The basic wood cleaning practices were described in the July, 1938, issue of this journal. Rearrangement of conveyors and the addition of new equipment has enabled the breakdown plant to produce enough cleaned wood to keep pace with the mill expansion. A picture of the wood preparation plant can be gained from a study of the accompanying drawing which shows the layout as it was prior to the latest expansion plus the new additions in the shaded area.

Formerly all pieces, large and small passed through the Stetson-Ross cant barkers, or, if very small the pieces went through the trimmer and into the 4-foot conveyor from which good pieces were picked for hand barking.

With the need for increased production the passing of the small pieces through the Stetson-Ross barkers was a bottleneck for these machines are designed to handle large cants. Two Gruber slab barkers were installed and under the new arrangement all questionable pieces go directly to these machines from the edgers. No edgings go through the main line. The installation was designed and installed by James Brinkley Co. of Seattle.

As the demands upon the wood preparation plant increased refinements were made to increase production. Comparative figures show this clearly. In 1937 the log breakdown plant turned out 10,000 board feet per hour; during the period, 1938-1941 the output was increased to 18,000 board feet per hour; and, this year the production has been stepped up to 24,000 board feet per hour.

But in stepping up the production the power requirements have not gone up in proportion. When the plant turned out 18,000 board feet per hour the electrical requirements were 2,400 h.p. With a production of 24,000 board feet per hour, ⅓ more, the power required is 2,731 h.p., or roughly ⅛ more.

In 1938 two Sumner 84-inch chippers were installed to chip the large cants and a 66-inch chipper handled the smaller wood. One of the 84-inch chippers has been modernized to carry six knives and, with the same horsepower, 250, and the same speed, 360 r.p.m., the production has increased 40 per cent over the four-knife discs and the quality of the chips has been improved. The other 84-inch chipper is being rebuilt to carry eight knives.

The incline of the shaker type chip screens has been changed to increase their capacity and efficiency, and feeders installed to give uniform feed. The belt chip conveyors installed in 1938 were of sufficient capacity to handle the extra volume.

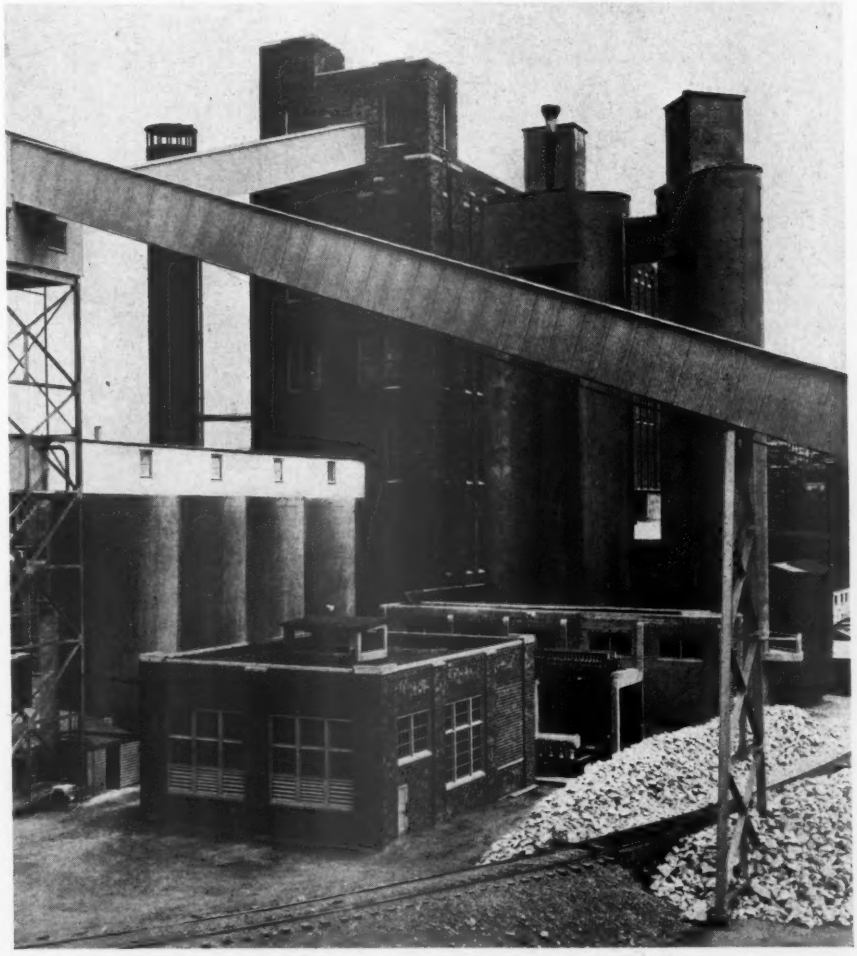
In Mill B the chip storage bins are over the six digesters. When the first three were installed in 1938 a manually controlled chip distributor was employed to discharge the chips into the three bins from the conveyor belt. This is now being used on the six bins but shortly an automatic chip distributor traveling back and forth at a predetermined rate of speed, will be installed to discharge equal volumes of chips into each bin without the constant attention of the operator. This was designed by the Puget Sound Pulp & Timber Company's engineers, and is being built by the Link-Belt Company.

Acid Making

● The two 5x14-ft. Sumner Iron Works rotary sulphur burners installed in 1938 possessed sufficient capacity to handle the extra load three new digesters have placed upon them. The burners are refractory lined by Stebbins Engineering Corporation.

Changes have been made in the sulphur melting system. Originally it was melted in tanks mounted above the burners, the sulphur being transported in carts from the storage discharge conveyor to the conveyor to the melters.

The sulphur is now melted in an outside concrete tank set into the ground adjoining the discharge conveyor from storage, and a sheet



The Bellingham acid making plant. At the left are four of the seven concrete sulphur storage silos. In the foreground is the burner building housing the two Sumner rotary sulphur burners. Back of it are the lead coolers made by the Northwest Lead Co. of Seattle. Behind the coolers is the building housing the acid pumps, fans and instrument panel. Then the Jenssen acid towers. The two on the right are the new ones, the others being built in 1938. The 45-degree angle facilitates lime rock handling. Lime rock is delivered by rail and discharged alongside the acid plant. Digester building for Mill B in the background. Conveyors are for chips.

metal roof protects it from rain and dirt. A Bingham vertical type centrifugal pump of stainless steel pumps the molten sulphur to the burners.

The new automatic sulphur discharge system is interesting. The sulphur is taken from the bottoms of the concrete storage silos by a screw conveyor and dropped into a hopper mounted on a turntable which is built integral with the platform of the Fairbanks scales. From this hopper a short length of screw conveyor takes the sulphur and drops it into the concrete melting pit.

When the weight of the sulphur reaches 900 pounds the feed from the storage silos is shut off automatically by a photo-electric cell and the short conveyor from the hopper on the scale platform starts. This stops by itself when the scale pointer returns to zero. The scale registers each 900 pound load. It can be set for any tonnage required and to operate as frequently as necessary to keep the melting pit at the proper level. The entire sulphur handling system from the storage discharge into the burners is automatic.

Three additional sulphur storage silos were constructed, making seven in all with a total capacity of 2,800 tons.

The lead gas coolers and the pond were three quarters built in 1938 and the fourth quarter added this year to take care of the increased production. The lead coolers were supplied by the Northwest Lead Company of Seattle.

Two new Jenssen acid making towers were constructed, each 10 feet in diameter and 96 feet in height. The new ones were set at an angle of 45 degrees to those erected in 1938 to facilitate lime rock handling. Th first towers were 11 feet in diameter and 96 feet high. All four towers were constructed of reinforced concrete and tile lined.

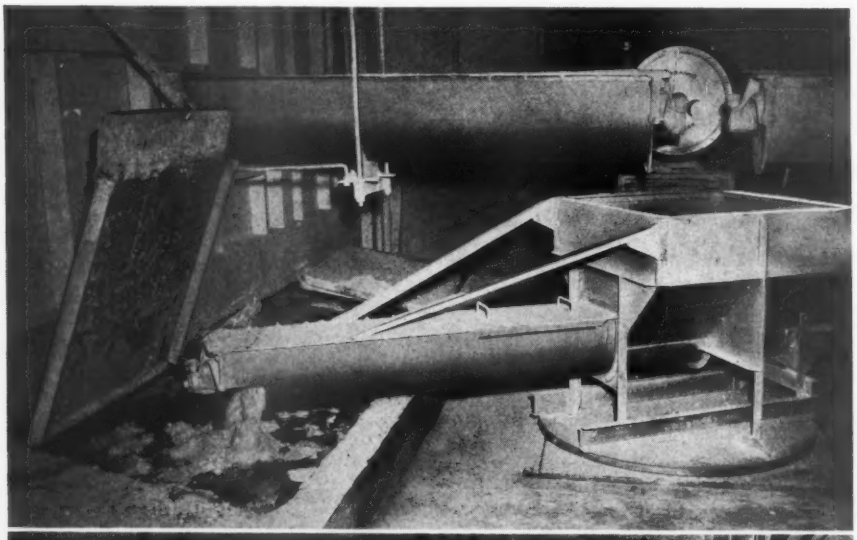
Cooking

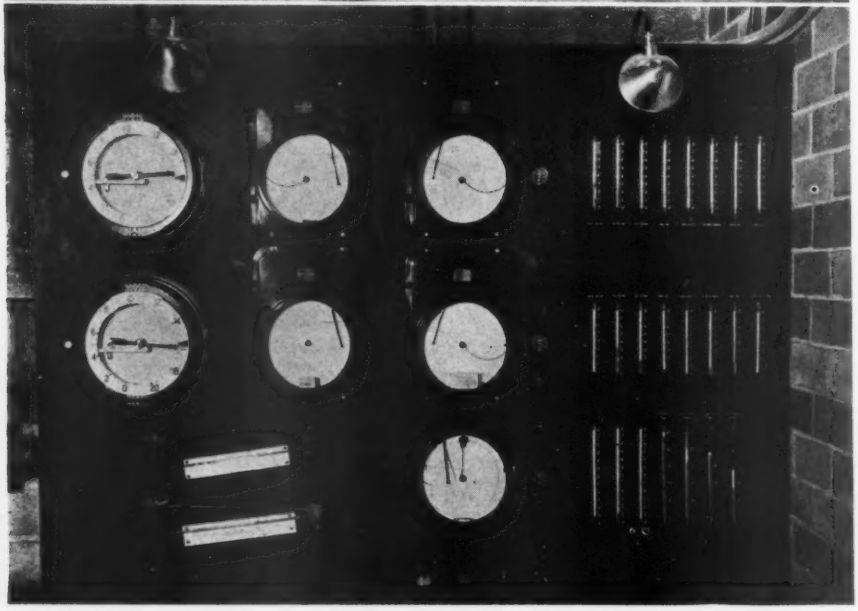
● The three new digesters were 18 feet in diameter and 56 feet in height, the same size as the three installed in 1938. They were lined, as were the other seven digsters at Puget Sound, by the Stebbins Engineering Corporation of Seattle.

Puget Sound employs a mechanical chip packer of its own design employing a short-bladed propeller driven by a 3 h.p. electric motor. The Bellingham plant was the first mill on the Pacific Coast to pack its chips.

The three original digesters in Mill B were equipped with forced circulation in the latter part of 1938 and the three new ones are similarly equipped. All digester valves, fittings and piping are of special ESCO stainless steel and were cast by the Electric Steel Foundry Company of Portland, Oregon. The three new acid circulating centrifugal pumps are also of ESCO stainless steel and were cast by the Electric Steel Foundry Company for the Bingham Pump Company of Portland.

Digester instrumentation is described under the heading of Instrumentation.





The new automatic sulphur handling system is shown above. Sulphur from storage is delivered by the screw conveyors to the hopper on the Fairbanks-Morse scales. When a predetermined weight is reached the conveyor motors cut out and the motor driving the short screw conveyor from hopper to melting pit at the left starts up. After all the sulphur in the hopper is removed the motor stops. This cycle is repeated at any predetermined interval necessary to provide sufficient molten sulphur for the burners.

Below is the acid plant instrument panel. Each of the two sulphur burners has a Bristol Pyromaster pyrometer for measuring temperature and a Leeds & Northrup Micromax SO_2 recorder. Bristol low range vacuum gauges measure the draft of the acid tower fans. A Foxboro recording thermometer records the temperature of the sulphur in the concrete melting pit. A line of 8 manometers indicate the gas pressures throughout each Jenssen tower system.

SO_2 Recovery

● The Puget Sound Pup & Timber Company's mill has a simple and efficient SO_2 recovery system. Over wooden check work in the vomit stacks fresh water from the city mains is sprayed to condense steam and absorb the SO_2 in the gases released upon the blowing of a digester. The spray water is proportioned to give acid of uniform high strength during the entire blow.

The acid solution produced is collected at the bottom of the stack and stored in a wood tank for use in the acid plant. It may be used either directly in the Jenssen towers or be pumped to a stripper tower where the gas released is used to further strengthen the acid from the acid plant.

The Chemipulp system installed in 1938 was of adequate capacity to handle the three new digesters.

Blow Pits

● The three new blow pits and three vomit stacks added in the present expansion program are of the same size and construction as the three installed in 1938, of Douglas fir, 36 feet in diameter and 20 feet in height, mounted on a concrete slab foundation poured over piling. The vomit stacks, also of Douglas fir, wood stave construction, are 10 feet in diameter and 103 feet high. The blow pits and vomit stacks for the new unit as well as for the old were supplied by the National Tank & Pipe Company of Portland, Oregon.

Puget Sound's own design mechanical chip packer. Set into the neck of the digester to be filled, the 3 h.p. motor driving a stub-bladed bronze propeller evenly distributes the chips.

The bands on the vomit stacks are Everdur where the corrosion is greatest. All bands on the top and the first six below the opening of each stack are of Everdur.

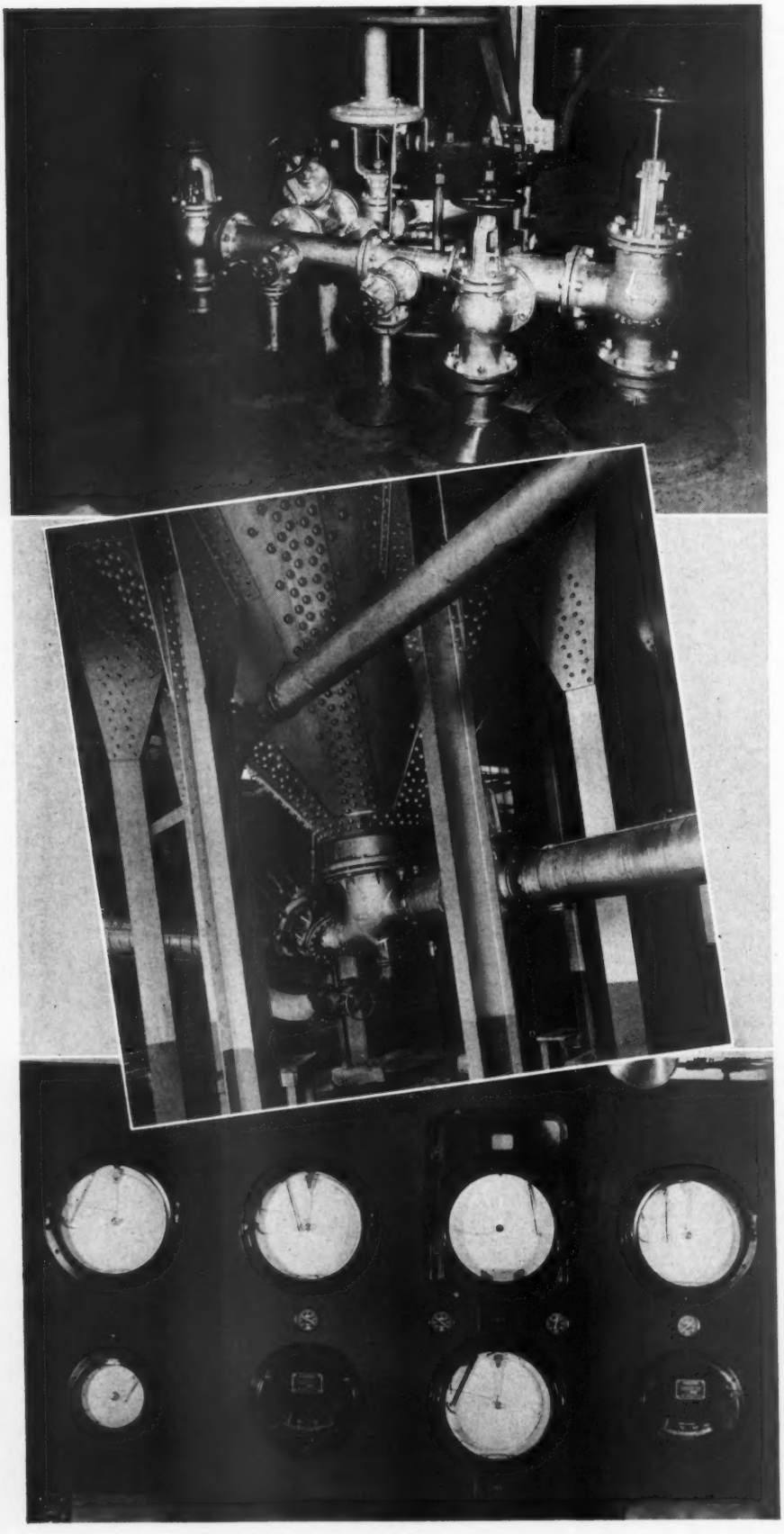
Blow pit bottoms are of stainless steel as are the original three, of thicker gauge than that usually employed and the holes are of smaller diameter. These bottom plates were again supplied by the Electric Steel Foundry Company of Portland.

From the blow pits where the stock is thoroughly washed by a specially designed monitor nozzle system it is sluiced into a 36-inch wood stave header and pumped to the screen building.

Screening

● The stock from the blow pits is washed in two 5x7-foot all rubber lined Impco washers, the first having been installed in 1938 and the second this year. The washed stock drops into a concrete, tile-lined stor-

Puget Sound's digester operating floor showing five of the six digesters in Mill B, instrument panels, Foxboro stabiflo valves and ESCO stainless steel valves and fittings.



age chest from which it is pumped when needed.

Following the washers the stock is pumped to the top floor of the screen building and begins its gravity flow, passing first through the four knotters, and then to the rifflers of which four new lines have been added to the six installed in 1938. These ten rifflers are 8 feet wide, 60 feet in length and felt lined. Two 8-foot square by 4-inch wide bafflers are in each riffler with the baffle boards 12 inches apart. The stock discharges into tile lined concrete collecting troughs and drops down to the floor below onto the primary flat screens, passing on to the secondary screens and the remaining stock goes over the tailing screens.

When Mill B was constructed in 1938 five lines of four flat screens were installed. These were of the Impco, bronze vat, Dunbar silent drive type. A duplicate installation was bought for the expansion of Mill B, making ten lines of flat screens manufactured by the Improved Paper Machinery Corporation of Nashua, N. H., and sold by Kenneth B. Hall, Pacific Coast representative with offices in Portland. The Impco flat screens are all driven by Fairbanks-Morse motors through V belts at speeds from 500 to 600 r.p.m.

The primary screens are equipped with .008 cut screen plates, the secondary screens with .007 cut plates and the tailing screens with .006 cut plates.

There are a total of 840 screen plates in daily service in the Bellingham mill, 560 plates in the screen room of Mill B and 280 plates in the screen room of Mill A. The entire 840 plates were supplied by the Fitchburg Screen Plate Company of Fitchburg, Massachusetts, through their Pacific Coast representative, Kenneth B. Hall of Portland, Oregon.

Top relief valves and fittings of Esco stainless steel appear in the upper picture. Note the Foxboro Stabilo valve. In the center picture are shown the blow off valve, fittings and pipe, all of stainless steel furnished by the Electric Steel Foundry Company of Portland. The six digesters in Mill B have duplicate valves and fittings.

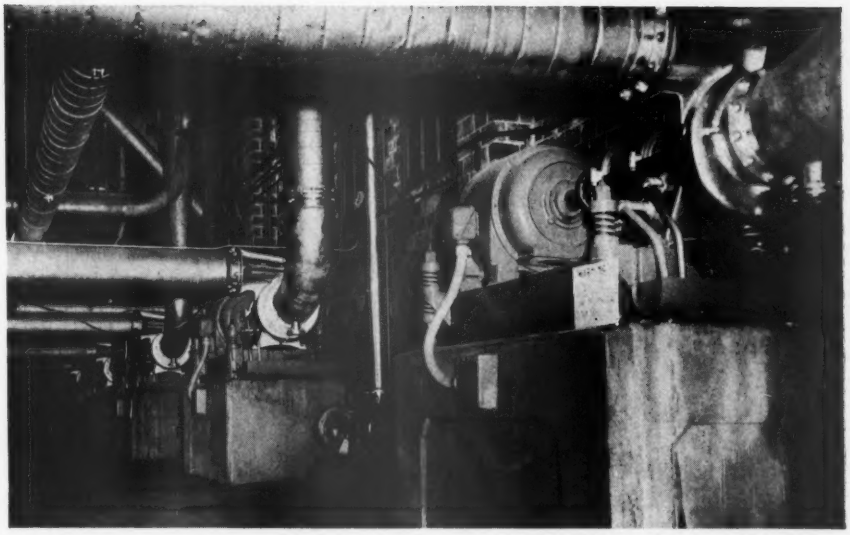
One of the six Mill B digester instrument panels is shown in the lower photograph. On each of the panels are a Foxboro steam flow meter, a Foxboro liquid level recorder, a Foxboro top relief recorder-controller, a Bristol Pyromaster temperature recorder and a Westinghouse ammeter on the motor of the acid circulating pump.

And the 840 plates are all Crodon chromium plated, the plating being done by the Chromium Corporation of America of New York.

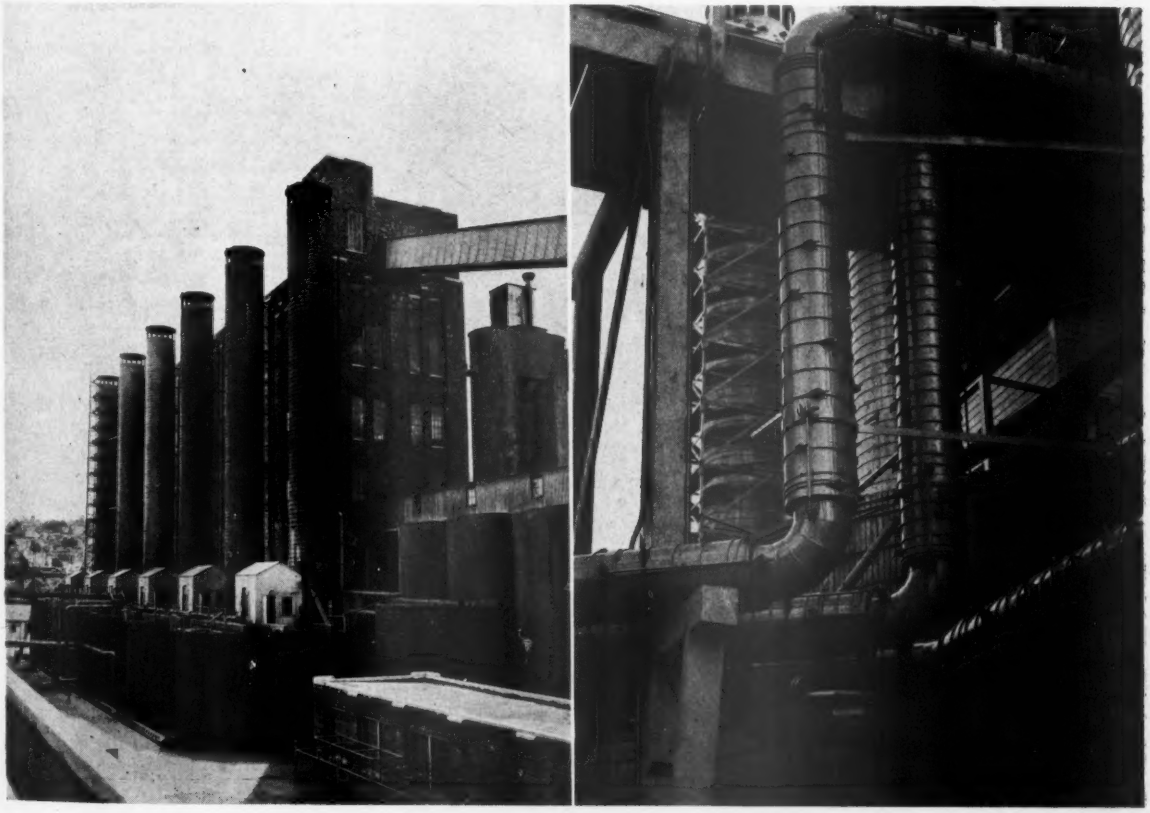
Through a centralized control panel in the screen room of Mill B, one operator runs the knotters, rifflers, screens, washers and deckers, handling 330 tons of pulp per day. All valve and motor controls are on the panel which is mounted on an elevated platform.

Besides the two 42x120-inch Impco deckers installed in 1938, two additional Impcos were installed in 1941. The new ones are 48x120-inch and like the earlier ones have wood vats, bronze cylinder moulds and face wires, but are double ended while the earlier ones are single ended. All four are equipped with motor driven couch rolls which are synchronized with the cylinder motor, thereby eliminating wire wear.

The deckered stock drops through the floor into the white tile lined concrete stock chests. There are four of these chests, including one new one of 11 tons capacity. Agitation is accomplished by Noble & Wood propeller type agitators driven by Fairbanks-Morse motors through Western angle type reduction gears manufactured by the Western Gear Works of Seattle. The chests are constructed with a midfeather running longitudinally through the center and the propeller agitators are mounted in holes in the wall of this midfeather. There are ten Noble & Wood agitators in the four chests, four single units

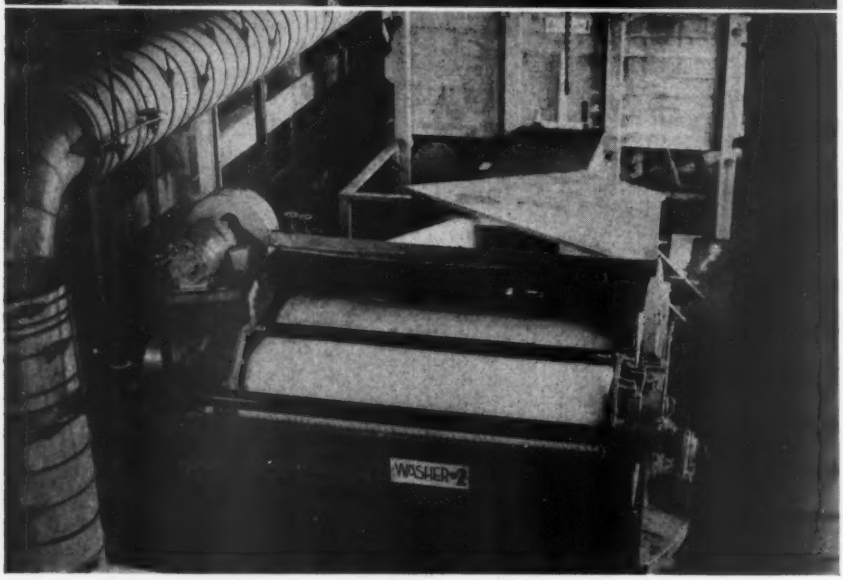


Five of the six acid circulating pumps in Mill B digester building appear above. These Bingham stainless steel acid pumps are spring mounted to allow for expansion and contraction of acid lines and were cast by the Electric Steel Foundry Co., of Portland.



Each of the six digesters in the recently expanded Mill B has its own blow pit and vomit stack of Douglas fir wood stave construction.

Corrosion in stock and white water lines is avoided by the use of wood stave pipe of Douglas fir and welded Everdur elbows and fittings.



and three duplex units. These were supplied by Kenneth B. Hall of Portland.

Pumping Simplified

● In the article describing the completion of Mill B in the July, 1938, issue, the following statements were made which bear repeating for the reason that the expansion program has substantiated them.

"The simplicity of the screen building layout and its gravity flow is impressive. There are but four pumps in the entire building, one all bronze white water pump of 7,300 gallons per minute capacity driven by a 300 h.p. Westinghouse synchronous motor, a smaller white water pump for high head, a small vertical sump pump handling screenings from the Biffar refiner to the wet machine, and one bronze stock pump driven by a 125-h.p. Westinghouse synchronous motor.

"The Bingham Pump Company of Portland, Oregon, designed all the pumps in the plant to permit the doubling of their capacity by simply changing impellers."

In expanding Mill B this year the impellers were changed and the capacity of the stock and white water pumps doubled. To provide an extra margin of capacity one new Bingham stock pump and one new Bingham white water pump were added in the screen room.

The expansion of the Bellingham mill from 270 to 470 tons per day required the installation of but six additional pumps including one Worthington feedwater pump for the new boiler.

Cleanliness

● All through the Puget Sound Pulp & Timber Company's mill great care is exercised to prevent the pulp from coming in contact with iron or other material which may contribute dirt. All materials in contact with the stock are corrosion resistant.

Stock and white water lines are wood stave construction and were supplied by the Brooks Lumber Company of Bellingham. Elbows and fittings are of Everdur and were

On the top floor of the riffling and screening building are the rifflers while on the floor below are the Impco bronze vat, Dunbar drive type flat screens, equipped with "Fitchburg" New Type-Duplex Slot Crodon chromium plated screen plates.

In the lower picture are shown the two Impco all rubber lined 5x7-foot washer. The one in the foreground was installed this year, the other in 1938.

fabricated by the Alaskan Copper Works of Seattle, who also fabricated stainless steel piping and other miscellaneous equipment for stock and white water handling.

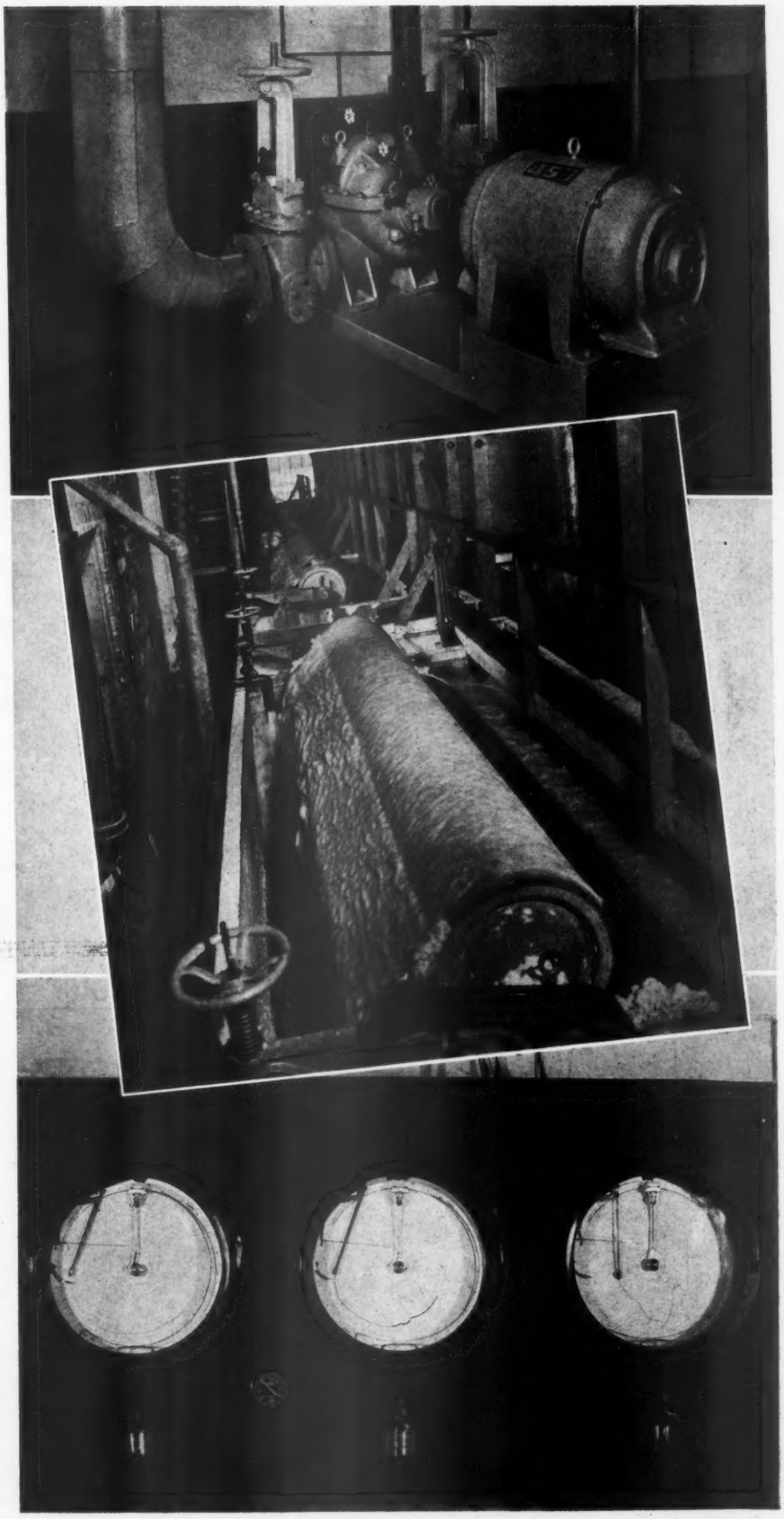
Drying

● The drying machine building was doubled in size to accommodate two more drying machines but only one additional machine was installed at this time. Piling are in for the fourth machine and the concrete floor poured. The space is now used for storage of rail shipments and about 1,500 tons can be stored in the area inside the machine room. This arrangement greatly facilitates car loading as a depressed railroad track extends the full length of the machine room just outside the storage area. In addition to this storage the mill has three warehouses on the dock which was lengthened 200 feet. Total storage capacity is 8,000 tons.

As the operation of the two Flakt dryers installed in 1938 proved satisfactory a third Flakt was bought to dry the added production. It was purchased from AB Svenska Flaktfabriken of Stockholm, Sweden, through A. H. Lundberg of Seattle, Pacific Coast representative. Installation was made under the direction of Tore Ahlin, Flaktfabriken's factory engineer on the Pacific Coast.

The third Flakt is 4 inches wider than the other two and has fifteen decks instead of 13 which gives the machine 20 per cent greater drying capacity than either of the first two machines. The Flakt was enlarged after arrival by the addition of two decks built in Seattle under the supervision of Mr. Ahlin.

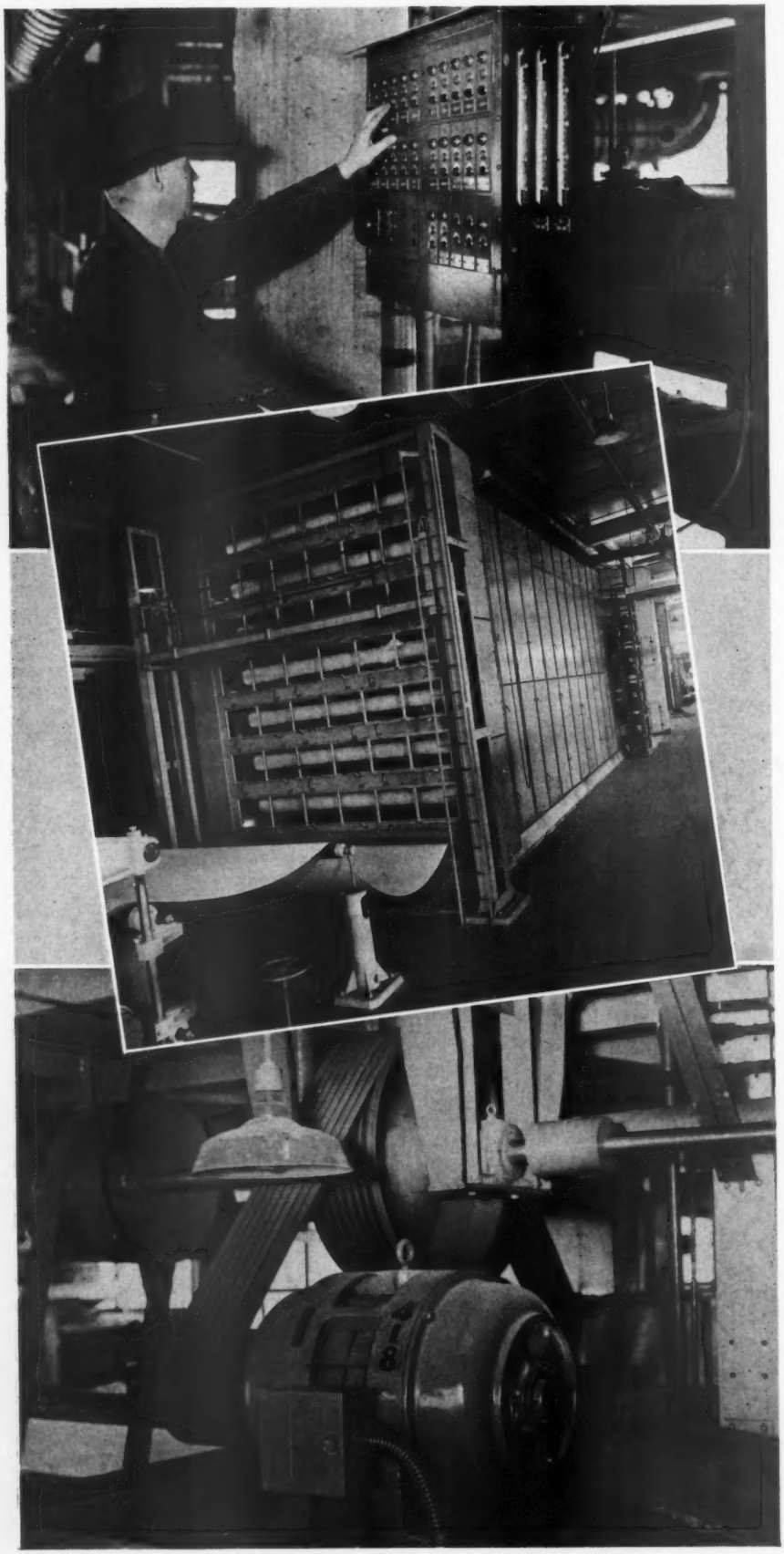
A specially designed flow distributor for discharging stock uniformly across the fourdrinier of the new No. 3 machine was designed by Puget Sound's operating and engineering departments. In this flow distributor stock and white water are brought together in an original design mixing chamber in the inlet



In the top picture is the new Bingham white water pump driven by a 50-h.p. Fairbanks-Morse motor. Elbow is of Everdur to prevent corrosion.

The four Impco deckers appear in the center photograph, the two new double ended deckers being in the foreground. All four are of wood vat construction with bronze moulds and fittings.

Below, three of the four Foxboro liquid level recorders on the machine stock chests.



pipe, instead of in the convention type mix box.

The No. 3 machine consists of a Karlstad fourdrinier, a press section, a predryer, the Flakt dryer, cutter and layboy. The trim is 130 inches as compared with 126 inches for the No. 1 and 2 machines. The wire is 59 feet long. There are three suction boxes, two rotary and one flat. The breast roll and wire guide rolls are of copper covered steel tubes. Six of the 32 table rolls are copper covered steel tubes and the others are seamless copper tubes. The breast roll runs on totally enclosed SKF roller bearings while the table rolls run on SKF ball bearings enclosed in metal holders which may be raised or lowered. Saveall trays are of copper.

The suction press consists of a suction roll, a press roll and a pre-press roll, and the suction roll is cantilevered to facilitate wire changing. The suction roll is bronze covered, the press roll is soft rubber covered and the pre-press roll is hard rubber covered and grooved. The suction roll runs in plain bearings while the other two operate in SKF roller bearings. Pressing is through a double lever system with weights.

Two wet presses consist of lower rolls rubber covered and top rolls of highly polished cast iron. The top rolls run in SKF roller bearings. A double lever system with weights provides the pressing.

The third press is a modern Kamyr design felt press, considerably heavier than the other two, the bottom roll is rubber covered and the top roll is of highly polished cast iron. The felt guide rolls for the press section are copper covered steel tubes. A felt suction box is placed on the first press felt.

The predying system consists of two drying cylinders, one press roll and one pulp guide roll. The press roll is of steel copper covered and the pulp guide roll is of copper. An aluminum hood connected to the exhaust system removes the satur-

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One operator runs the knotters, rifflers, screens, washers and deckers handling 330 tons per day, from a central control panel on a platform in the screen room.

The center picture shows the wet end of the new No. 3 Flakt dryer with the pulp web leaving the predryer and entering at the bottom of the Flakt.

Below, the 75 h.p. Fairbanks-Morse motor driving the new pulp drying machine. It is mounted on a balcony close to the roof and power is transmitted through a line shaft, belting and spiral bevel reduction gears.

date air from the predrying section.

Nash vacuum pumps provide the ncessary suction for the fourdrinier and press sections. An L-7 Nash handles the three suction boxes, an L-8 serves the suction couch and an L-5 provides the suction for the felt suction roll. These are all driven by Fairbanks-Morse motors through V-belts.

The Flakt Dryer

● The pulp sheet enters the Flakt dryer from the predryers at 44 per cent air dry and leaves at 94 per cent air dry. The guaranteed steam consumption is 1.3 pounds per pound of water evaporated.

The enclosed drying chamber is 105 feet long, 13 feet wide, exclusive of the fan chamber, and 19 feet high. The roof, bottom and two longitudinal sides are entirely covered with sheet iron and fully insulated. The inlet and outlet ends are equipped with hinged windows, counterbalanced so they can be easily opened to any position.

Inside, the Flakt consists of a number of vertical intermediate sections all alike. At each end is an end section where conveyor shafts and turning rolls are placed. The drying chamber is further divided into logitudinal, horizontal channels, separated by solid sheet iron partitions.

All three Flakt dryers are equipped with Fulton Dryer Drainage Systems.

The pulp web passes back and forth inside the Flakt dryer fifteen times as compared with thirteen times in No. 1 and No. 2 machines, hot air being constantly circulated against both sides of the pulp sheet. The ten propeller fans which circulate the hot air are located five on either side at the center of the dryer and each is driven by a 15-hp. 1,800-rpm. Fairbanks-Morse motor through V-belts.

The fifteen conveyors carrying the pulp sheet through the Flakt are of extra strong forged steel with carrying links, furnished with rolls and solid drawn tubes. The chain drives run on guide rails on either side of the dryer. Heating coils are of forged, gilled pipes with connections placed inside the dryer.

The drying chamber is equipped with a disconnecting device for automatic shutting down of the conveyors and the cutter in case of a rupture of the pulp web inside the drying chamber. This device is combined with push button control thru a magnetic clutch.

Adjustable platforms are located at the inlet and outlet ends of the Flakt, intended principally for the machine tenders to start the machine, are vertically adjustable by means of manually operated controls.

Heat Recovery

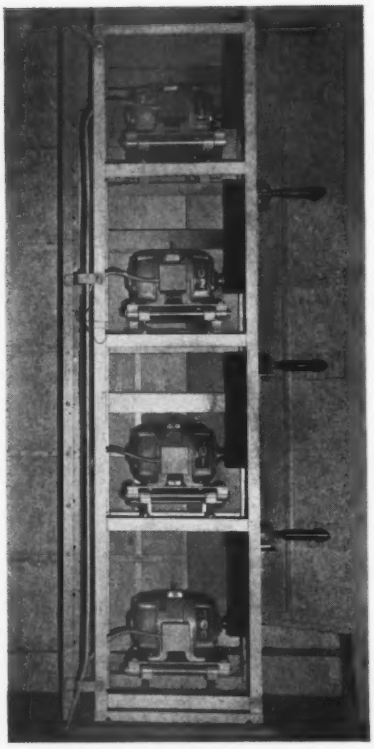
● A high percentage of heat is recovered from the vapor which is drawn by fan upwards from the Flakt dryer to the heat recovery system on the roof. This hot vapor performs triple duty. It first heats the incoming air employed for drying and then heats water for the enclosed hot showers over the fourdrinier, and also heats the air circulated in the machine room, keeping it an even temperature. All air is filtered through an American air filter supplied through R. E. Chase & Company of Tacoma.

The principal difference in the Flakt method of drying over other methods lies in the fact that the pulp web is never at any time in direct contact with a heated surface. This is said to be the system's chief advantage for it provides a gentle drying of the pulp with very little loss of strength and color. Steam consumption is low and it is reported that the Flakt dried sheet will absorb water in the paper mill's beater in far less time than required for pulp dried on cylinders.

Machine Drive

● The No. 3 fourdrinier and Flakt is driven by a 75-hp., 1,200-rpm. Fairbanks-Morse, 2,300-volt motor located on a balcony. Power is transmitted by V-belts to a line shaft running in roller bearings and short belt take off power for the several sections through totally enclosed spiral bevel reduction units. Each drive reduction gear is equipped wtih a magnetic clutch.

The fourdrinier, press section and predryers with vapor exhaust hood of the new No. 3 pulp drying machine at Puget Sound. The wet end of the Flakt dryer appears at the far right. The fourdriniers of the No. 1 and No. 2 machines show in the left background.



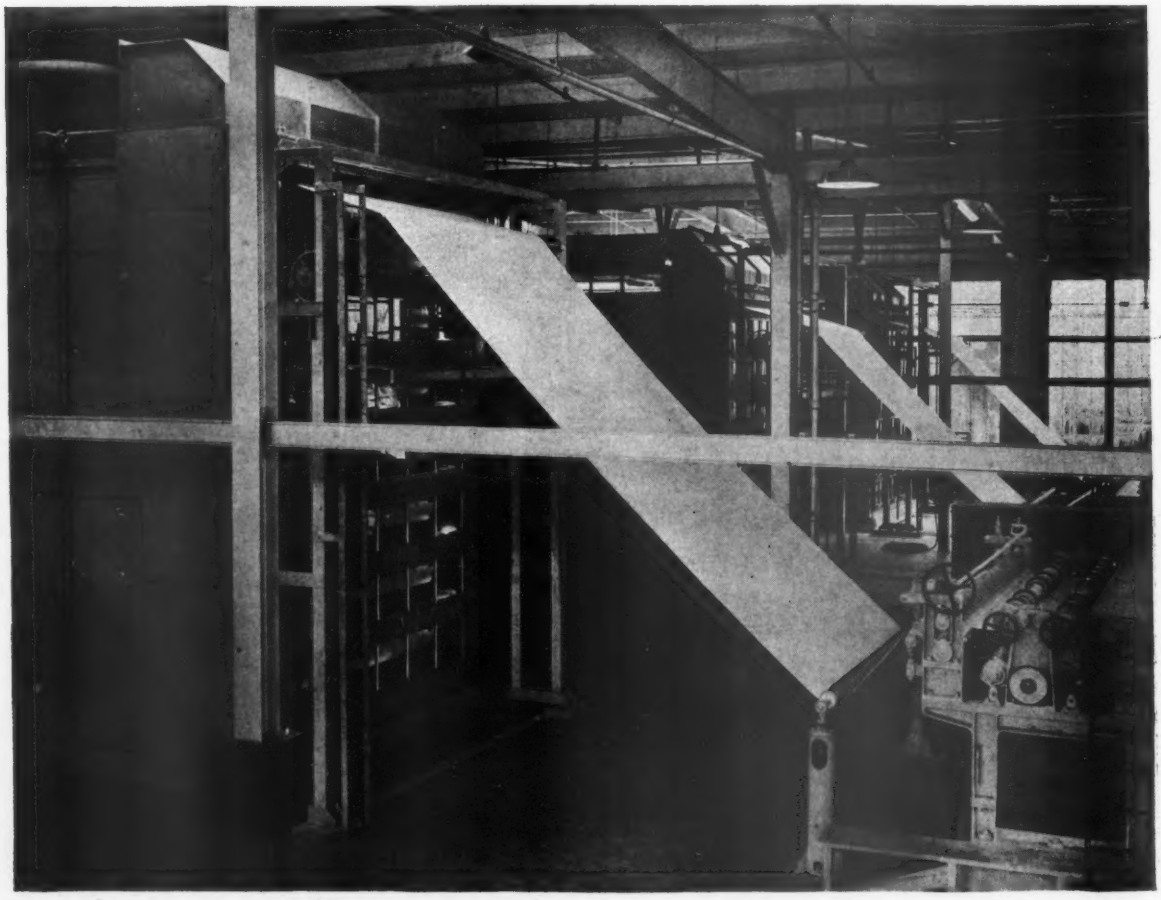
Four of the five hot air fans on each side of the new Flakt pulp dryer are shown here. Each fan is driven by a 15 h.p. 1800 r.p.m. Fairbanks-Morse motor.

Cutting and Baling

● The pulp web as it comes from the Flakt dryer is slit longitudinally by circular knife slitters and then cut into 30-inch lengths by a revolving cross cutter. The resulting sheets, 32 x 31½ inches, are transferred by a felt to the layboy. This layboy frame and drive rises automatically with the increasing height of the sheet piles, the sheets being laid on a stationary conveyor table made up of a number of small conveyor wheels with the rims up. When the sheet piles have attained the required height a grid is run out to hold the sheets while the piles are removed from under the layboy by tilting the wheel conveyor table.

The table tilts to a degree sufficient to transfer the piles of sheet pulp by gravity to a wheel conveyor. With the completed piles of pulp on the conveyor they are then conveyed at right angles to the layboy until they align with the gravity rolls. They then move by gravity, picking up the bottom wrapper through a slot in the rolls, continuing on to the Fairbanks-Morse Weightograph. The operator either adds or removes pulp sheets to obtain the desired weight of 400 pounds and the Weightograph automatically records on paper tape the weight of the bale.

From weighing the bale passes to the 600-ton hydraulic press which is equipped with two steel belt conveyors the length of the press platen and mounted on spring suspended rollers. The rollers are spring balanced to just support the one bale clear of the press platen. The bale is then compressed to 40 cubic feet per ton. After pressing the bale moves on the roller conveyor to a turntable where the two operators put on the top wrapper, fold the top and bottom wrappers and tie the wires which are passed through slots in the turntable. After the first two wires are applied the bale is turned 90 degrees and the second two are



The pulp webs leave the three Flakt dryers and pass to the cutters. The new No. 3 Flakt dryer is in the foreground.

applied. Bale stops on the turntable keep the wire spacing uniform.

The stops are depressed when the tying is completed and the bale is pushed off the turntable onto the roller conveyor. The baler men lower the pneumatic hoist equipped with a grab. The bale is picked up and loaded on a wooden skid, 16 bales to the skid. These skids are transferred to pulp storage by Towmotor gas lift trucks, which are also used for box car loading and transporting the pulp onto the dock for loading into ocean freighters.

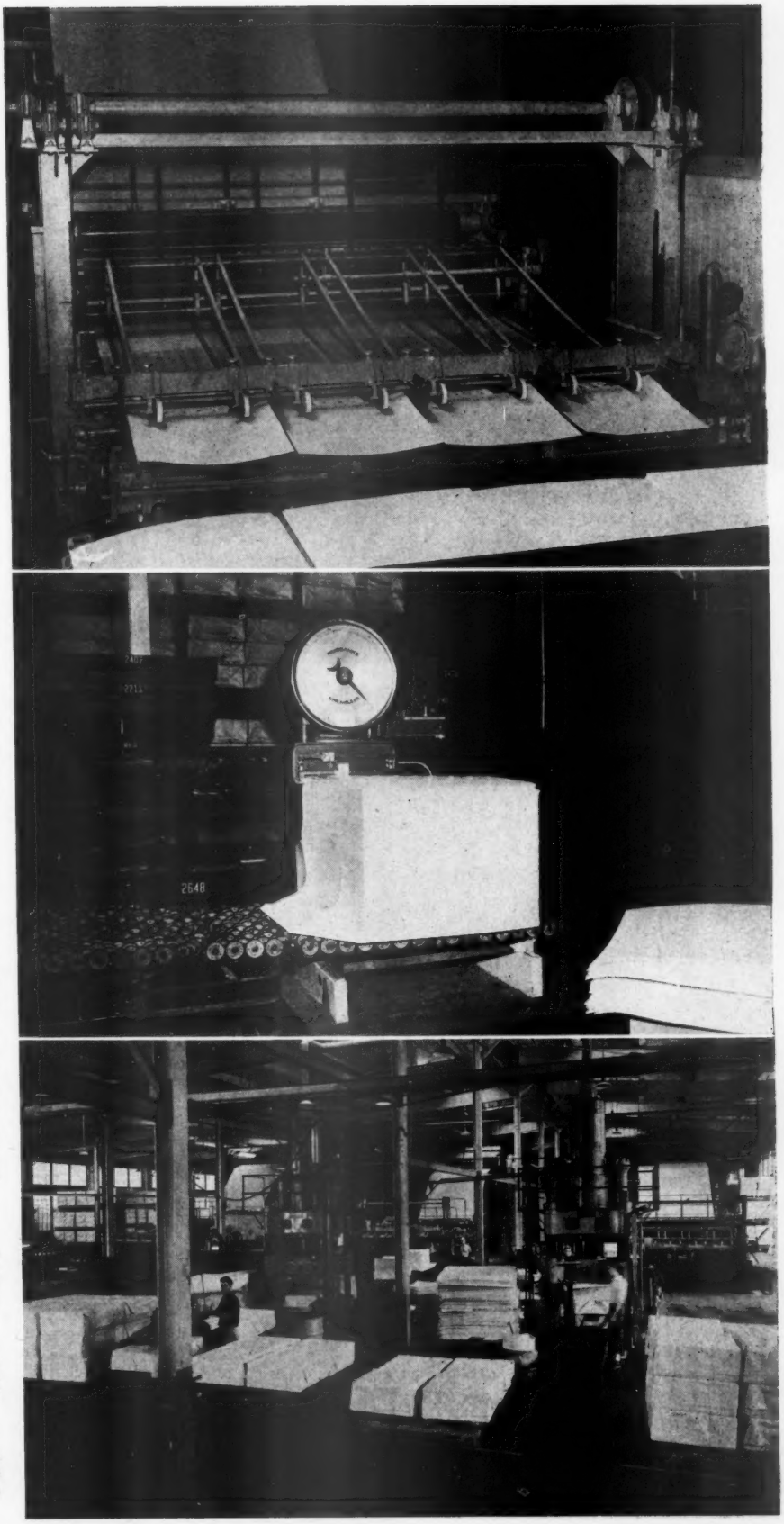
Steam Generation

● In that part of the July, 1938, article describing the design and equipment of Mill B's steam generating plant, it was stated that:

"The principal aim in designing the steam generating plant was to obtain an unusually high degree of dependability coupled with simplicity of operation. The equipment is coordinated to provide high efficiency.

"Two boiler units are now installed. The plant is arranged and equipment selected so that a third boiler can be added in the present building. Each boiler unit will burn hogged fuel or oil, furnishing the flexibility required for pulp mill operation. Each unit consists of a 645-hp. Babcock & Wilcox Stirling Type with water walls operating at 500 degrees; B. & W. superheater; B. & W. air heater; B. & W. oil burners; extension furnaces; Diamond soot blowers; Diamond bi-color water gauge glasses; Copes feedwater regulator; Buffalo Forge induced and forced draft fans; and instruments.

"Each boiler unit will produce 50,000 pounds of steam per hour on hemlock hogged fuel, and up to 70,000 pounds per hour on dry fir hogged fuel or on oil. Each is designed for 200 pounds pressure and



At the top is the sheet cutter with the No. 3 Flakt dryer in the background. Most pulp for export is perforated as required by the customs services of many countries.

In the center is the Fairbanks-Morse Weightograph which automatically prints on paper tape the weight of each bale.

Lower, two of the three hydraulic presses and conveyors upon which the bales are wrapped and wire tied. Skids are picked up by gas lift trucks.

will be operated at approximately 180 pounds. There are water walls on all sides of the main combustion chamber.

"The induced draft fan is of the cinder removal type, designed to remove 90 to 95 per cent of the cinders and ash, driven by a 100-hp. Westinghouse synchronous motor. The extension furnace is of the two-cell type, equipped with Economy water-cooled grates, Bigelow-Liptak arches, forced draft over draft dampers.

"The boiler instruments are grouped in a panel on each extension furnace firing deck. The instruments include a Hays HO_2 recorder; Hays draft gauges; Alnor pyrometer; thermometers, and Cochrane flow meters. Control of extension furnaces is provided by dampers operating gear, with hand wheels conveniently located on the extension furnace deck. The Diamond bi-color water gauge indicates the boiler water level on a mirror located at eye height above the firing deck. Thus the control of fuel, draft and combustion conditions may be maintained by the operator from the extension furnace deck."

In the spring of 1939 the third boiler was installed, a duplicate of the first two. In 1940 the building housing the steam generating equipment was extended to accommodate the fourth boiler, another Babcock & Wilcox boiler of the same specifications and addittional feedwater equipment. The Puget Sound steam plant now generates 160,000 pounds of steam per hour.

Bailey Combustion Control

● Bailey Combustion Control systems have been installed on the third and fourth boilers and ordered for the first and second boilers from the Bailey Meter Company of Cleveland, Ohio. These operate on hogged fuel only.

The system of Bailey Combustion Control as shown diagrammatically in the accompanying drawing maintains steam pressure in the main header to plus or minus 2 pounds by automatic control of air to the hogged fuel boilers.

The control system was first installed on the new boiler which has variable speed forced and induced draft fans. Furnace draft is main-

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Top, a Towmotor gas lift truck deposits three bales at a time in a box car.

Lower, Towmotor lift trucks take skids loaded with twelve pulp bales onto the dock and slings pick up six at a time for loading in the hold.

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tained constant by automatic regulation of the forced draft fan speed. This is regulated by a Bailey air operated furnace draft controller which measures the furnace draft and continually readjusts the fan speed to maintain the desired draft in the furnace. Each fan control valve is supplied with a hand-jack which may be used in case of air pressure failure.

The air supply to the boiler is automatically regulated in accordance with variations in steam pressure as measured by the Bailey master steam pressure controller. The controller establishes a loading pressure which commands the speed of the induced draft fan. If the steam pressure tends to rise, the turbine speed is gradually throttled through a floating control system so that less air is supplied to the furnace for combustion.

Controls for the remaining boilers have been adapted to constant speed fans and Bailey control drives are used to control the position of the louvre openings on each fan. These controls are parallel with the one master pressure controller.

Bailey selector valves are provided for both the forced and induced draft fans on each boiler which enables the operators to regulate on manual or automatic control. By use of their selector valves at the control panels, the load may be divided between boilers so that any desired division of load may be obtained at all times.

The system is operated by compressed air at a pressure of approximately 35 pounds per square inch.

There are four Worthington boiler feed pumps, one driven by Fairbanks-Morse motors and three by Westinghouse steam turbines. Feedwater heating and deaeration is provided by two Cochrane deaerating heater and storage tanks. The oil burners are supplied by a pumping and heating set consisting of four Worthington duplex oil pumps and two oil heaters. A new Ingersoll-Rand 300-cubic feet per minute air compressor was installed in 1941 to furnish additional air supply for the mill.

As in the original steam plant the piping is all of welded, shop prefabricated and assembled on the job. Welded fittings and flanges were used extensively. All valves on the high pressure steam lines and boiler feed lines are of cast steel with stainless steel trim, designed for 300-pound service.

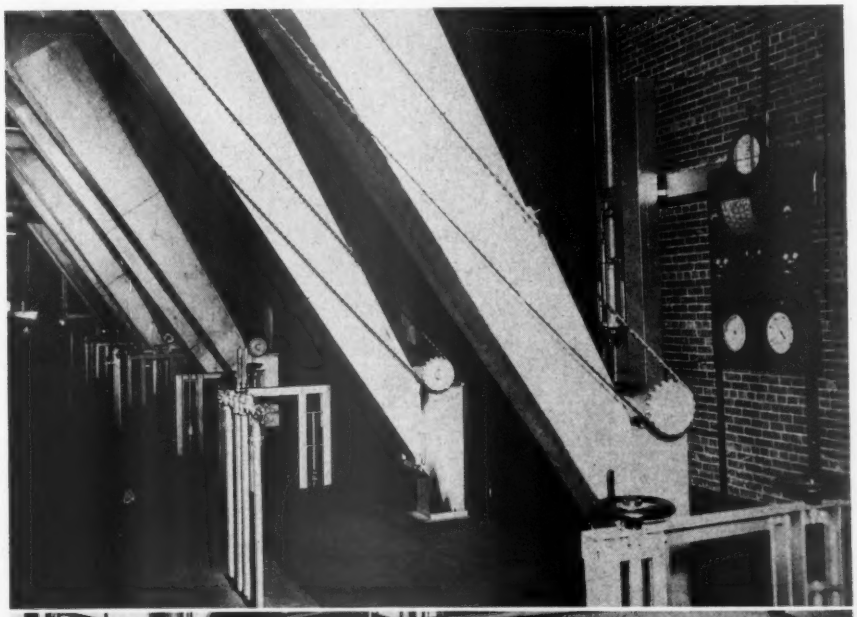
The steam plant, including all four boilers, was erected by C. C. Moore & Co., Engineers of Seattle. The steam plant building consists of concrete foundations and steel frame work encased in brick.

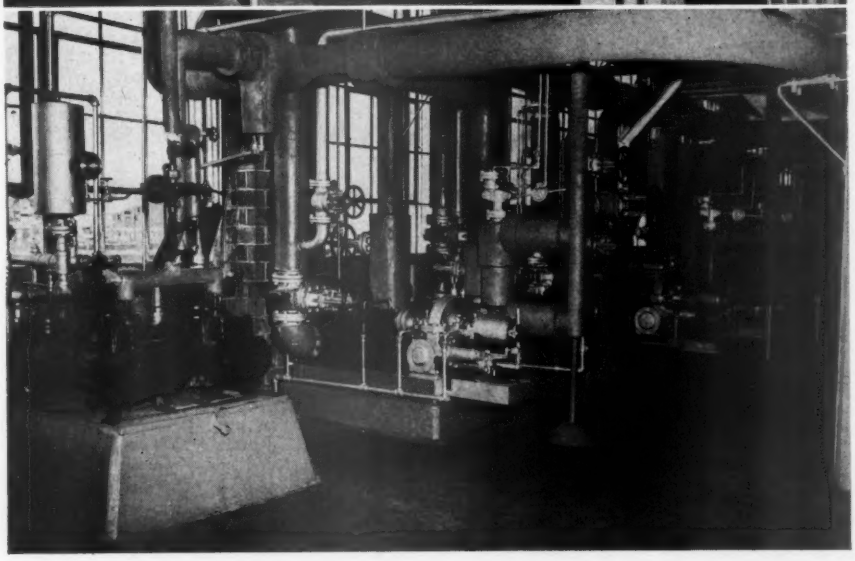
Boiler tubes are kept clean by the Hall System of boiler feedwater conditioning for which William R. Gibson of Seattle is Pacific Northwest representative.

An interesting feature of the Puget Sound steam plant is the method of conditioning grate water. Instead of employing the common practice of circulating fresh, untreated water through the grates and then deaerating and using as feedwater makeup, the new system for the water-cooled grates is closed. Chemically treated water is used in the closed system employing a heat exchanger to control the temperature of the grate cooling water.

Electric Power

● The Puget Sound Pulp & Timber Company purchases all its electric power requirements from the Puget Sound Power & Light Company. From the power company's transformer station located on the mill property all electric current is furnished at 2300 volts. Two cen-

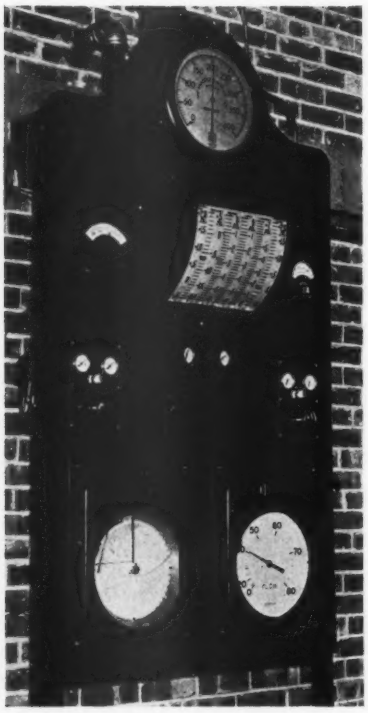




Operating floor of the steam plant shows in the top picture with the hogged fuel chutes to the four Babcock & Wilcox Stirling Type boilers.

The new No. 4 boiler appears on the right with its instrument panel.

Below, the Worthington feedwater pumps.



Instrument panel for the new No. 4 B & W Stirling Type hogged fuel and oil burning boiler. Bailey Combustion Control operates automatically when hogged fuel is being burned.

trally located substations, one adjoining at the log breakdown plant, and the other convenient to the remaining departments, serve the entire mill.

Two outdoor type oil circuit breakers, each of 175,000-kva. breaking capacity, serve as a disconnecting means for the substation feeders, and each breaker may be tripped at will by an electric control switch mounted on the substation main panel.

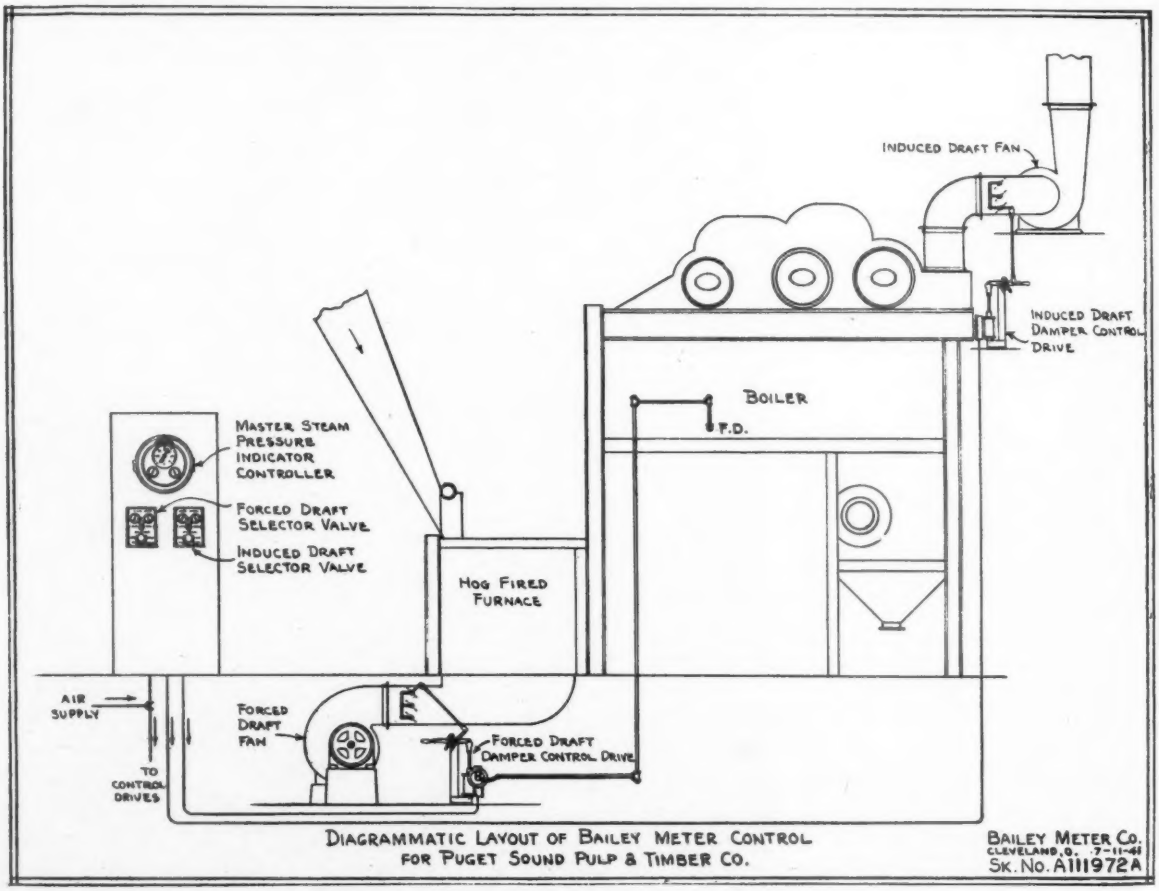
The equipment in each substation is identical. Each consists of a 2300-volt switch board and a 440-volt switch board and a bank of 3—500-kva 2300/440-volt transformers. The 2300-volt switch board consists of a main panel and a series of 2300-volt feeder panels for the various motors operating on 2300-volt current. One panel serves as a main breaker center for the 3—500 kva transformers which are located on the outside of the building.

Through a rigid bus these transformers are connected to the 400-volt switch board in the substation. Underground cables connected to the oil circuit breakers on these switch boards feed the various motor panels throughout the mill. Although all these circuit breakers, installed in 1938, had a capacity of 600 amperes each, the maximum load, prior to the 1940-1941 expansion, on the 440-volt feeders was limited to 400 amperes, leaving ample margin for the requirements of the additional productive capacity.

Twenty-two centrally located motor panels of the dead front type serve the 450 motors throughout the plant. All motors over 50 hp. operate on 2300 volts and there is now 3,250 motor horsepower operating on the 2300-volt current. The remainder operate on the 440 volts. The total connected horsepower is about 8,000.

Current for power factor correction is obtained from the nine synchronous motors rated at 1,725 hp., all of which are designed for 80 per cent power factor.

All starters for the 2300-volt motors are of cubical design. Each starter is mounted in an individual compartment encased in steel, and each starter has above it, its individual disconnecting switch.


INDUCED DRAFT FAN
INDUCED DRAFT DAMPER CONTROL DRIVE
BOILER
F.D.
MASTER STEAM PRESSURE INDICATOR CONTROLLER
FORCED DRAFT SELECTOR VALVE
INDUCED DRAFT SELECTOR VALVE
HOG FIRED FURNACE
AIR SUPPLY
TO CONTROL DRIVES
FORCED DRAFT FAN
FORCED DRAFT DAMPER CONTROL DRIVE
DIAGRAMMATIC LAYOUT OF BAILEY METER CONTROL FOR PUGET SOUND PULP & TIMBER CO.
BAILEY METER CO. CLEVELAND, O. 7-11-41
SK. NO. A111972A

The motors exposed to water drip or spray are of splash proof design.

All 2300-volt controls were furnished by the Westinghouse Electric & Manufacturing Company, as well as the synchronous motors. The General Electric Company supplied the switch boards for the electric substations and the distribution board for the 440-volt motors in the chipping plant.

The Fairbanks-Morse electric motors in the Puget Sound mill now total more than 6,000 horsepower.

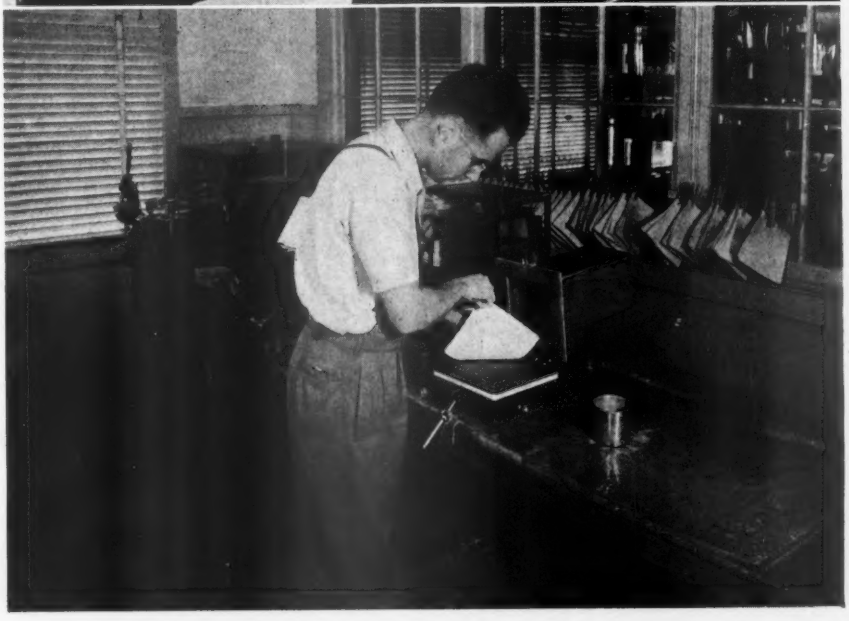
Water Treatment

● In December, 1939, the company completed an 8,000,000 gallons per day water filter plant of the pressure filter type, so designed as to permit easy expansion to 16,000,000 gallons per day. During the expansion of the mill this year the filter plant was increased to its maximum capacity by the addition of six new units. Each presure filter unit is nine feet in diameter and 34½ feet in length. The filter plant was designed and installed by the Northwest Filter Company of Seattle. Sterilization of water in White water systems for slime control is accomplished using chlorine and and ammonia through Wallace & Tiernan equipment installed in 1938 and expanded in 1941.

The fresh water system installed underground in 1938 was built large enough to care for the extra capacity just added and the sewer system was likewise made large enough to handle the increased volume.

Instrumentation

● The acid plant control system is now new but was installed subsequent to the completion of Mill B in 1938. The two sulphur burners are controlled from a central instrument panel. Connected to each burner is a Bristol Pyromaster pyrometer for measuring temperature, a Leeds and Northrup Micromax SO_2 recorder, and two Bristol low range



Top, the enlarged laboratory and operator staff office building in which the engineering department is located.

Center and lower, scenes in the Puget Sound Pulp & Timber Company's well-equipped laboratory, which maintains close control over processing operations essential in producing standardized quality.

vacuum gauges to determine the suction on the draft fans.

A line of eight manometers indicate the gas pressures throughout each Jennssen tower system.

A Foxboro recording thermometer measures and records the temperature of the sulphur in the concrete melting pit.

In the digester building the steam from the main steam header is controlled by Foxboro desuperheater controllers and pressure controller-recorder. Each of the six digesters in Mill B has an individual instrument panel on which are mounted a Foxboro steam flow motor, a Foxboro liquid level recorder, a Foxboro top relief recorder-controller, a Bristol pyromaster temperature recorder and a Westinghouse ammeter on the acid circulating pump, the latter indicates the operating efficiency of the acid pump. Connected to the Chemipulp accumulator are a Foxboro recording liquid level gauge, a Foxboro pressure-controller recorder and a Bristol pyromaster temperature recorder.

A Foxboro liquid level recorder on the brown stock chest indicates to the blow pit man the level of the stock.

Each of the four machine stock chests are equipped with Foxboro liquid level recorders to keep the machine tenders informed of the available stock.

White water level and fresh water makeup are controlled also by a Foxboro liquid level controller.

Steam pressure to each of the three Flakt dryers is connected by a Foxboro recorder-controller operating through a Stabilog valve. Steam pressure in the predryers is controlled by Foxboro indicator controller.

The Foxboro instruments were purchased through Bumstead-Woolford of Seattle and Portland, Pacific Northwest representatives for the Foxboro Company.

The boiler plant instrumentation was described along with the description of the steam generation equipment.

Technical Control

● The laboratory has been enlarged to accommodate the engineering department and to provide more office space for the operating force.

Process control and the laboratory are under the direction of E. O. Ericcson, chief chemist for the Puget Sound Pulp & Timber Company. The laboratory building, located between Mill A and Mill B, houses the operating force offices, the engineering department, a chart room, a general chemical laboratory and a pulp testing laboratory complete with constant humidity room. Here is coordinated the technical work of the several departments. Charts and reports are arranged to guide the operators in producing uniform quality. Raw materials are tested, boiler water analyzed, standards set for control work, standard solutions prepared and a number of other related jobs.

Each step in the processes for producing quality unbleached sulphite pulp not controlled by instruments is under constant technical control. Testing and sampling stations at each step enable the operators to maintain uniformity. Emphasis is placed on tests and information that actually improve and stabilize the qualities of the final product.

Some of the important routine tests made to standardize quality are: testing chips for size and moisture; testing the acid for combined and free SO_2; checking the burner gases for sulphur dioxide content and temperature; water temperature for acid making. Testing the cooking acid for sulphates and organic number; testing digester liquor samples which are tested prior to blowing; consistency in screen and machine rooms; pH and bacteria counts for slime control; and the finished pulp is tested for bleachability, Mullen, freeness, tear, fold, brightness, moisture content, basis weight and dirt count.

Other Data

● The conveyor systems installed in 1938 were of sufficient capacity to handle the production of the enlarged mill and the only changes made were in the wood room as described under that section and shown in the drawing. The detailed description of the conveying systems was given in the July, 1938, article.

The Schorn Paint Manufacturing Company of Seattle furnished all the paint used by the mill, including special paints for corrosion prevention.

Among the Bellingham firms contributing supplies and equipment for the construction of the new unit were: Morse Hardware Company, hardware; Brooks Lumber Company, wood pipe; Ershig Sheet Metal Works, sheet metal work; Union Foundry Company, cast iron fittings; Columbia Valley Lumber Company, lumber for construction, and the Union Printing Company.

Britain's Exports On Selective Basis

● "The application of a selective policy towards export trade has been announced by the president of the Board of Trade," reports The World's Paper Trade Review of London for May 23rd.

"The Government is as desirous as ever of encouraging export trade, but the difficulty in present circumstances is that few exports do not in some way make a demand on resources such as labor, material, plant and shipping space, which are also in direct heavy demand for the War. It has, therefore, been necessary to apply a selective policy to exports and to encourage those which help the War effort. The tests applied, said Mr. Lyttelton, were (1) whether the exports earned or saved exchange needed for the payment of essential imports; (2) whether, in the case of the sterling area or Allied countries, they were essential to the importing country; (3) whether the value of the exported product was high in relation to the imported raw material; and (4) whether the article could be manufactured and exported without putting an undue strain on resources needed for other War purposes. Subject to these overriding considerations, it was the policy of H.M. Government to encourage exports and to maitain trade connections so far as the circumstances permitted.

"Mr. Lyttelton recognized that the booking of export orders was rendered very difficult by the need to apply these various tests, but his department had given, and would continue to give, general guidance to the Export Groups to help them in answering inquiries. He was also in constant touch with the other Government departments concerned with questions of supplies of labor and raw materials for manufacture for export.

"In the meantime it is interesting to learn that the latest figures of Britain's export trade (which, owing to War conditions, are not published) show that it is not only being maintained but has expanded. In the first three months of this year exports increased progressively, and in the aggregate substantially exceeded the values of the last three months of 1940. In part, the increase is no doubt due to higher prices. The achievement is nevertheless noteworthy because the extension of the War, through German aggression, to certain European countries has restricted British markets, the principal of which are at present in North and South America."

A. J. Smith Honored By Purchasing Agents

● A. J. Smith, purchasing agent for the Fibreboard Products, Inc., Vernon Division, was elected a director of the National Association of Purchasing Agents at the recent convention in Chicago.

Westminster Program Nearing Completion

● The modernization and expansion program of the Westminster Paper Company, New Westminster, B. C., is nearing completion. All of the equipment had arrived early in July. The paper machine will be shut down about two weeks while the changes are being made. The machine operators will take their week's vacation with pay during the shutdown period.

Rayon and other CHEMICAL USES OF WOOD PULP

Rayon Turns The Tables

● When rayon was first introduced and all through its early stages of development the public considered it as a substitute for silk. But in recent years its perfection has reached such a point that rayon is no longer considered as a substitute.

The Rayon Organon in its July issue published the following story which shows how conditions have changed, quoting:

"We're sure our cotton and wool friends won't mind a little joke at their expense.

"A real shortage in rayon staple fiber has developed, particularly due to the stoppage of imports from Great Britain. Thus, the domestic rayon weavers are having to turn to cotton and wool as "adulterants" to their former lines of all-spun rayon fabrics.

"So here we finally have the old cry of "substitution" in exact reverse."

Rayon Yarn Situation Growing Tighter

● "Of all the domestically used textile fibers," says the Rayon Organon in the July issue, "rayon has the tightest supply situation today. The available supply of raw cotton is more than adequate. Similarly, silk is still readily available in sufficient quantities. And the world supply of wool is large, in spite of the fact that there might be a problem in getting ships to transport this wool to the United States from Australia and other countries. But the supply of rayon available to the American market is necessarily limited to the productive capacity of the American rayon producers, foreign supplies of rayon now being essentially unavailable.

"This limited supply situation has become even more acute in recent months because of the increased demand for rayon products. Thus it has become necessary to allot yarn to customers and the producers are attempting to do this allocation in a fair and impartial manner."

Inventories of rayon yarn held by producers have declined from a "working level" of one month's supply in June, 1939, to a current level of less than a half week's supply, states the Rayon Organon.

Shipments of yarn by the industry, continues the Organon, have increased from 162,000,000 pounds in the first six months of 1939 to 186,000,000 pounds in the same period of 1940 to 220,000,000 pounds in the first half of 1941. These increased shipments have been due somewhat to inventory depletion, but are principally related directly to production increases.

The first factor is the increase in enlarged consumer demand and this is very important. A second factor, and one which will continue to grow in importance, is the new uses for rayon mainly centering around defense items. In this category would be such rayon goods as linings, parachutists' jump suits,, parachutes (especially those used for aerial mine laying), powder bags, electric wire insulation, and Navy men's neckerchiefs, as well as the usual items of hatbands, cord chevrons, etc. Of interest, too, is the high tenacity large diameter rayon yarn which is specified for use as the fabric in airplane tires, as well as in the construction (in combination with rubber) of the new self-sealing gasoline tanks for combat airplanes.

The rayon filament yarn industry has increased its operating capacity and output from a level of 25,000,000 pounds per month in the second quarter of 1939 to 32,500,000 pounds per month in the second quarter of 1940 and up to a current rate of about 37,200,000 pounds per month. By the end of 1941, states the Rayon Organon, this monthly rate is expected to be approximately 38,000,000 pounds per month. Further, it should be recalled that rayon production is a 24-hour-per-day and a 7-day-per-week operation. Operating their plants on this basis, the rayon producers obviously are not "holding back" production in any sense of the word.

Rayon's Remarkable Growth in Decade

● The most important change in the textile industries in the past ten years, says the Department of Commerce, has been the substitution of rayon for silk.

In 1929 46,830,804 pounds of all silk fabrics were produced in the United States. The production dropped to but 6,929,385 pounds in 1939, while the manufacture of all rayon fabrics totaling but 13,146,354 pounds in 1929 expanded to 290,239,540 pounds in 1939.

A Sixth Swedish Mill To Make Rayon Pulp

● A. B. Iggesunds Bruk intends to start manufacturing rayon pulp next New Year, reports from The Swedish Wood Pulp Journal for May 31st.

The preliminary work has already begun on the new plant which is estimated to cost about a half million kronor.

Iggesund will be the sixth company in Sweden to manufacture rayon pulp.

Dissolving Pulp May Be Used for Explosives

● Under a New York date line the Pacific Coast Edition of the Wall Street Journal on July 11th ran the following story:

"A number of leading manufacturers of high grade sulphite wood pulp are understood to have been asked by the Government to consider supplying pulp for nitrating for use in explosives. A total of 8,000 tons a month would be required by September, it is reported with a plan to increase the monthly taking to 10,000 to 15,000 tons by the first of the year. The pulp required would be similar to the alpha cellulose produced for rayon, although somewhat different treatment must be used in preparing it for use in explosives.

"The immediate difficulty in supplying this pulp is that all manufacturers are extremely busy supplying pulp for their regular customers, either for paper or for rayon manufacture. Unless and until new plants could be constructed and put in operation to produce pulp for that special purpose, it would be necessary to divert part of capacity from the regular business for the Government's needs."

Dow Chemical Offices In New Location

● The Great Western Division, The Dow Chemical Company, offices in Seattle are now located at 1707 Textile Tower, in offices of modern design. The move from the former offices at 1201 in the same building was accomplished early in July. The new telephone number is Main 8891.

In charge of Dow sales and service in the Pacific Northwest is Earl G. Thompson. He is assisted by Fred R. Armbruster.

British Using Photo-Letters

● "The first batch of photo-letters under the newly instituted airgraph service from the Middle East to Britain arrived in London May 13th," reports The World's Paper Trade Review of London for May 23rd. "The mail contained 50,000 micro-film letters which had been flown all the way. They weighed only 13 pounds whereas 50,000 ordinary letters would have weighed nearly three-quarters of a ton.

"As soon as received the films were dispatched to the Kodak works where the staff immediately began to enlarge the letters from the size of a man's finger nail four by five inches. As fast as this was done the enlargements were rushed back to the Post Office to be placed in special envelopes and sorted and sent to all parts of the country for delivery.

"The airgraph service was begun in April and the first batch of letters took about a fortnight. It is hoped that this time will be shortened as the scheme develops. At present airgraph letters can only be sent from the Middle East to Britain, but later it is hoped to establish a similar service in the outward direction."

While the new system increases the consupmtion of paper through the use of an enlargement and a second envelope, the extra cost is inconsequential alongside the saving of weight and space had the letters been brought to Britain by ship.

Papermakers and Associates Hold Live Meeting in Los Angeles

W. H. Swanson, President, and R. G. Macdonald, Secretary-Treasurer of TAPPI, attend second meeting of Southern California group.

MEETING for the joint purposes of honoring two national dignitaries in the pulp and paper industry and to hear a talk by Bruce F. Brown, Sr., district manager of Fibreboard Products, Inc., the June 11 dinner meeting of the Papermakers and Associates of Southern California drew some 58 members and guests to the Mona Lisa restaurant.

Only the second assembly of this newly organized group, the June meeting featured greetings by W. H. Swanson and R. G. Macdonald, respectively president and secretary of the TAPPI, and the address by Mr. Brown. Herman Joachim, chairman of the PASC (vogueish initialed identification of the Papermakers and Associates of Southern California), presided at the session.

Chairman Joachim opened the meeting after dinner had been concluded. Announcing the purpose of the PASC to be that of developing good fellowship among men in the profession, he outlined the strides of the group, ". . . which still is a baby in point of age." The PASC was but four weeks old at that time.

Putting such business procedure as minutes, financies, by-laws clarification, etc. out of the way with dispatch, Mr. Joachim introduced the first of his honored guests, President Swanson of TAPPI.

No set speech was Mr. Swanson's. "Off the record" remarks characterized his talk, which centered on the pulp situation in the light of then-standing world conditions.

Secretary Macdonald of the TAPPI was next introduced by Chairman Joachim. Mr. Macdonald delved into the work of the TAPPI, explained its achievements and predicted that before long one of the national TAPPI conventions would be held in Los Angeles. He stressed the value to the industry, if not the world as a whole, of exchanging and publishing technical information and advised the PASC that it was on the right track.

Next piece of business was the introduction, by Mr. Joachim, of the main speaker of the evening, Bruce F. Brown, Sr.

A prepared paper (appearing elsewhere in this edition) with thoughts interspersed by considerable "ad-libbing" made Mr. Brown's talk interesting and entertaining as well.

Recounting the early days of the pulp and paper industry, Mr. Brown noted the inventions that have made the industry one of those now dominating the manufacturing skyline. As one of the pioneer Western pulp and paper figures, he spoke with authority of the old-time use of the omnipresent desert yucca in Southern California as a source for book paper. He predicted a total production of 16 million tons of paper for this year as compared with something over 14 million tons last year.

Mr. Brown began his pulp and papermaking experience with his father in central California where they operated a straw machine. He traced his career through the years to a mill in Hamilton, Ohio, and another in Indianapolis and still another in Tonawanda, New York.

Three days after the disastrous San Francisco quake and fire of 1906, Mr. Brown arrived at nearby Antioch, where he worked once again with his father and an uncle.

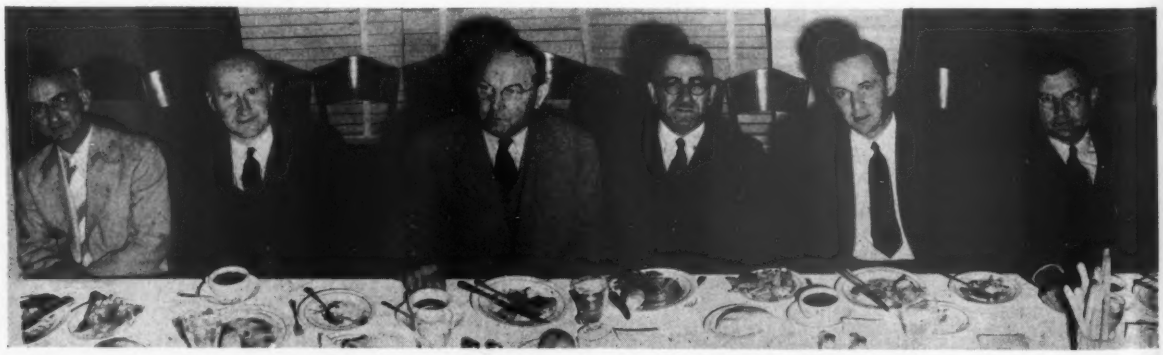
In 1912 he established a mill in Los Angeles, where production is now at a point undreamed of in early days.

Concluding his talk, Mr. Brown was given warm applause, whereupon Chairman Joachim again took the floor.

Among those responding to a request for a few short words were J. Walter Genuit of Fernstrom Paper Mills, Pomona; Bill King of Pioneer Flintkote; F. W. Adams, U. S. Gypsum Co.; Taylor Alexander, California - Oregon Paper Mills; George F. Ford, Fibreboard Products, all of Los Angeles; Charles Frampton, Fernstrom Paper Mills; Grant Farmer, Fibreboard Products.

The meeting closed at about 10 P.M. with a final announcement by Chairman Joachim that the next meeting is scheduled for around the 7th of August.

Those in attendance at the June 11th meeting of the Papermakers and Associates of Southern California, were:



Seated at the Speakers' Table, left to right, CHARLES G. FRAMPTON, member of Executive Committee of PASC, third vice chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Assn.; R. G. MACDONALD, National Secretary-Treasurer of TAPPI; BRUCE F. BROWN, Sr., District Manager, Fibreboard Products, Inc., Los Angeles; HERMAN L. JOACHIM, Chairman of Papermakers and Associates of Southern California and consulting engineer, Los Angeles; WALTER H. SWANSON, President of TAPPI, Kimberly-Clark Corporation, Neenah, Wisconsin; and J. WALTER GENUIT, Vice President and Sales Manager, Fernstrom Paper Mills, Pomona, Calif.

Herman Joachim, chairman, PASC, consulting engineer, Los Angeles; W. H. Swanson, president, TAPPI, Kimberly Clark Corp., Neenah, Wis.; R. G. Macdonald, secretary of TAPPI, New York City; Grant Farmer, vice-chairman, PASC, Fibreboard Products Inc., Los Angeles; John Van Ounsen, secretary, PASC, Pioneer-Flintkote, Los Angeles; W. T. "Hap" Tillotson, treasurer, PASC, United States Gypsum Company, Southgate; Charles G. Frampton, member of PASC executive committee, and superintendent, Fernstrom Paper Mills, Pomona.

From Fernstrom Paper Mills others present were: S. B. Stevenson, F. D. Backer, R. L. Carr, R. L. Mitchell, R. A. Baum, J. W. Jamison, J. Walter Genuit, R. S. Buckley.

From California - Oregon Paper Mills, Los Angeles, others were: V. P. Cole, superintendent; George McCord, C. H. Clough, Al Hatch, Taylor Alexander, R. Pomeroy, R. B. Clarke, A. Clerx, Harry Lilburn.

From Fibreboard Products Inc., Los Angeles, others were: Bruce F. Brown, Sr., district manager; Bruce F. Brown, Jr., Frank Wheelock, S. I. Wasell, S. Parker, E. Toliver, W. Axtell, R. K. Walters, E. R. Switzer, George F. Ford.

From Pioneer Division, The Flintkote Co., Los Angeles, others were: Glen Phillips, Frank Dilley, Bill King, Otto Sass, Bill Birdsey, W. L. Belleman, W. A. Kinney, M. E. Campbell, John J. Stanko.

From United States Gypsum Co., Southgate, others were: J. S. Tillman, W. C. Sheehan, J. E. Hartford, F. W. Adams.

Others present were: Walter Burroughs, Prisma Products Co., Los Angeles; George Cunningham, National Oil Products Co., Harrison, N. J.; Ray Sparling, Sparling Meters; E. E. Harper, Omega Machine Co.; B. B. Wallace, Foxboro Company; Archie Schwartz, California Ink Co.; Parke Math, California Ink Co.; J. M. Turner, Schumacher Wallboard Corp., Southgate; George H. Boeck, Oakite Products, Inc., Los Angeles; Thos. E. Rhodes, Pacific Pulp & Paper Industry, Los Angeles.

Southern California Group Meets August 7th

● The recently organized Papermakers & Associates of Southern California will hold their third meeting on Thursday evening, August 7th at 6:30 p.m. at the Mona Lisa restaurant in Los Angeles.

The program will be divided into two sections, a talk on labor relations and a symposium on fresh and white water. The announcement said, "Experts in mechanical and chemical clarification of water, water metering and sampling will present papers in their respective fields."

Questions on special water problems are asked for in advance and should be mailed to Dr. John H. Stanko, Pioneer Division, The Flintkote Company, Box 2218, Terminal Annex, Los Angeles, California.

Hawley Sets Production Record in June

● Hawley Pulp and Paper Company, Oregon City, Oregon, topped all previous monthly production of paper by producing over 8,000 tons of paper in June. This was attributed to the efficiency of the machines, the management of Carl Braun, the supervision by general superintendent Austin Nickles and the cooperation of the entire personnel.

Never before has the monthly production reached 8,000 tons.

B. C. Mill Income At New High in 1940

● Revenue of the pulp and paper industry in British Columbia last year was at an all-time high and more than $8,000,000 in excess of the ten-year average, according to provincial government figures released this month.

Official total revenue of the pulp and paper industry in 1940 is given as $22,971,000, compared with $16,191,000 in 1939, and $11,066,000 in 1938.

The ten-year average revenue was $14,270,000.

Pulpwood valued at only $8,000 was exported last year for British Columbia woods, compared with a ten-year average of $23,000. The highest total for exports in the ten-year period was in 1934, when the figure was $46,000.

Rayonier Becomes Corporate TAPPI Member

● Rayonier Incorporated, largest producer of dissolving wood pulps, was among the eleven concerns becoming corporate members of TAPPI during the first six months of 1941, according to an announcement by the Technical Association.

AT THE PASC LOS ANGELES MEETING ... No. 1, left to right, R. B. CLARKE, A. CLERX, and HARRY LILBURN, of the California-Oregon Paper Mills, Los Angeles; No. 2, V. P. COLE, Superintendent, California-Oregon Paper Mills, Los Angeles; No. 3, S. I. WASELL, S. PARKER and E. TOLIVER of Fibreboard Products, Inc., Los Angeles.

No. 4, left to right, R. S. BUCKLEY, Chief Chemist, Fernstrom Paper Mills, Pomona; GEORGE H. BOECK, Oakite Products, Inc., Los Angeles; and W. AXTELL, Fibreboard Products, Inc., Los Angeles. No. 6, ARCHIE SCHWARTZ, California Ink Co., Los Angeles; and DR. JOHN J. STANKO, Director of Research, Pioneer Division, The Flintkote Co., Los Angeles. No. 6, R. K. WALTERS, E. R. SWITZER and GEORGE F. FORD of Fibreboard Products, Inc., Los Angeles.

Camas Men Win Suggestion Awards

● Cash awards were made to three employees of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, on June 26, for suggestions which have been adopted in the plant.

F. P. Winesett received $35 for a mechanical counter on a bag machine; for a new method of strutting up false bottoms in blow pits, G. W. Jacobson was presented with $10. Gordon Junge also was awarded $10 for his suggestion for a better method of perforating facial tissue.

Two-dollar cash awards have also been recently made for suggestions which have been adopted. These include Elnora Grill, Bud Hall, J. Holmberg, Happy Hall, John T. Hunter, Lee Kirkpatrick, Jr., Charles Knode, Bert C. Knutson, Fred Kray, P. McCreadie, Flora Newman, Bert E. Sullivan, John H. Winters, Charles Zorn and W. E. Wegner.

Howard Graham Now at Roanoke, Virginia

● First lieutenant Howard C. Graham, former technical supervisor of the Washington Pulp and Paper Division, Crown Zellerbach Corporation, at Port Angeles, Wash., now is stationed at Roanoke, Virginia, in Army ordnance work. A reserve officer, he was called to active duty last November and stationed temporarily at Picatinny Arsenal, New Jersey.

Northwest Filter In New Location

● The Northwest Filter Company of which William R. Gibson is manager, moved July 1st from 1201 Textile Tower, Seattle, to larger quarters at 122 Elliott Avenue West. The telephone is Garfield 7700.

The move permitted the company to combine its offices, shop and warehouse facilities in one location. The Northwest Filter Company designs, manufactures and installs water filter and treatment plants, and represents The Bristol Company, Hagan Corporation, Calgon, Inc., Hall Laboratories, Inc., Goslin-Birmingham Mfg. Co., Inc., Del Monte Properties Co., and Process Machinery Co. Mr. Gibson represents the International Filter Company.

Hartwig Speaks Before Institute of Public Relations

● Otto R. Hartwig, social security advisor and general safety supervisor of Crown Zellerbach Corporation and Rayonier Incorporated, was one of the featured speakers at the Institute of Public Relations held on the campus of the University of Portland, June 29 to July 12, 1941.

Mr. Hartwig's subject was "The Workmen's Compensation Act," and during the course of his talk he traced the origin of workmen's compensation laws from their inception to the present laws which exist in the United States. The first workmen's compensation laws were enacted in Germany in 1871, on the theory that it was proper that industry should bear the cost of upkeep of workmen whose bodies were broken by industry's machines. Workmen's compensation laws were adopted by Great Britain in 1880, Denmark in 1892, Sweden in 1895 and by Norway in 1903.

According to Mr. Hartwig, the first workmen's compensation laws in the United States were enacted in 1908. Since that date every state in the union, with one exception, now has workmen's compensation laws in effect.

Commenting on the various state laws, Mr. Hartwig stated that most of them contain so-called merit or experience rating provisions which make it possible for employers having favorable experiences to secure a reduction in premium rates. Such provisions tend to encourage employers to take steps to prevent industrial accidents through the adoption and follow-up of effective safety and accident prevention programs in order to secure reduced premium rates. Obviously it is better to prevent accidents than to take care of accident victims and therefore anything that will serve to stimulate intelligent and persistent accident prevention should prove beneficial to the worker and employer alike.

Despite safety measures that have been taken by industry generally the surface has only been scratched so far as accident prevention work has been concerned. In spite of the progressively better safety record of the pulp and paper industry, Government statistics indicate that industrial accidents generally caused about four times as much lost time to workers in industry as did labor disputes in the year 1940. To the casual observer, said Mr. Hartwig, this would seem to indicate that industry generally must make even greater efforts along the line of safety and accident prevention work if the industrial manpower of the nation is to be preserved and maintained.

Among other featured speakers at the University of Portland sponsored Institute of Industrial Relations were The Reverend John P. Boland, Chairman of the New York State Labor Relations Board; Mr. B. A. Green, prominent Portland Labor Attorney; Mr. T. Morris Dunne, Chairman of the Oregon State Unemployment Compensation Commission; and Dean Wayne Morse, Dean of the University of Oregon Law School and Pacific Coast Arbitrator for Maritime Industries.

The paper, paperboard and roofing industries were well represented at the PASC meeting in Los Angeles . . . No. 1, S. B. STEVENSON, F. D. BECKER and R. L. CARR of the Fernstrom Paper Mills, Pomona. No. 2, R. L. MITCHELL, R. A. BAUM, and J. W. JAMISON of the Fernstrom Paper Mills, Pomona. No. 3, WALTER BURROUGHS, Prisma Products Co., Los Angeles; J. S. TILLMAN and W. C. SHEEHAN of the United States Gypsum Co., Southgate, Calif.

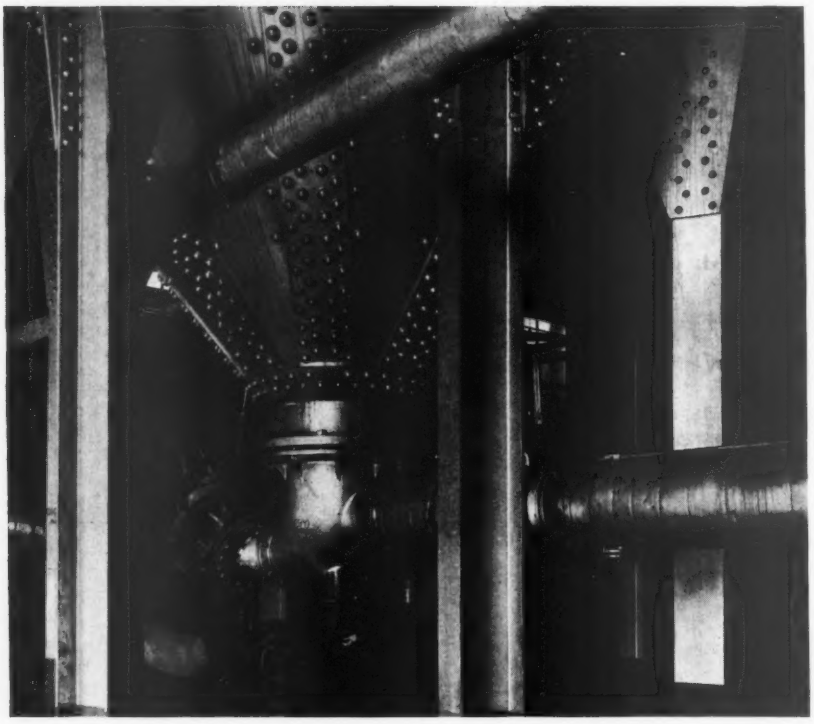
No. 4, GRANT FARMER, Vice Chairman of PASC and superintendent, Fibreboard Products, Inc., Los Angeles; JOHN VAN OUNSEM, Secretary of PASC and Technical Director, Pioneer Division, The Flintkote Co., Los Angeles; and GEORGE McCORD, California-Oregon Paper Mills, Los Angeles. No. 5, GLEN PHILLIPS, Superintendent of the board and felt mills, Pioneer Division, The Flintkote Co., Los Angeles; GEORGE CUNNINGHAM, National Oil Products Co., Harrison, New Jersey; and W. T. TILLOTSON, Treasurer of PASC and Superintendent of the Southgate paper mill, United States Gypsum Co.

No. 6, J. E. HARTFORD, U. S. Gypsum Co., Southgate; FRANK DILLEY and BILL KING, Pioneer Division, The Flintkote Co., Los Angeles. No. 7, C. H. CLOUGH, California-Oregon Paper Mills, Los Angeles; OTTO SASS and BILL BIRDSEY, Pioneer Division, The Flintkote Co., Los Angeles. No. 8, RAY SPARLING, Sparling Meters, Los Angeles; E. E. HARPER, Omega Machine Co., Los Angeles; and B. B. WALLACE, the Foxboro Company, Los Angeles. No. 9, F. W. ADAMS, U. S. GYPSUM Co., Southgate; PARKE MATH, California Ink Co., Los Angeles.

No. 10, J. M. TURNER, Schumacher Wall Board Co., Southgate; BRUCE F. BROWN, Jr., Fibreboard Products, Inc., Los Angeles; and W. L. BELLEMAN, Pioneer Division, The Flintkote Co., Los Angeles. No. 11, AL HATCH and TAYLOR ALEXANDER, Manager, California-Oregon Paper Mills, Los Angeles; FRANK WHEELOCK, Chief Chemist, Fibreboard Products, Inc., Los Angeles.

No. 12, W. A. KINNEY, Production Manager, and M. E. CAMPBELL, Chief Chemist, Pioneer Division, The Flintkote Co., Los Angeles; and R. POMEROY, California-Oregon Paper Mills, Los Angeles.

ESCO STAINLESS



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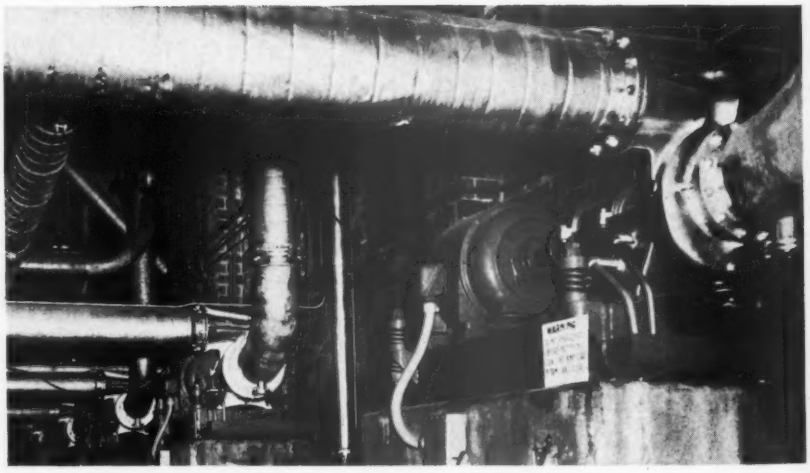
10

Digesters now installed, all using ESCO STAINLESS VALVES, FITTINGS and PIPING.

The ESCO Stainless Steel circulating systems installed on these Digesters are similar to those installed on 75 Digesters in the pulp mills of the Northwest, being a majority of the Digesters in operation in this territory.

The bottom blow fittings, top and bottom neck liners and top covers, also all the thermometer fittings, sampler and relief fittings installed on the Digesters, are made of ESCO Stainless Steel, which eliminates practically all replacement and maintenance expense.

All cast parts of the Pumps in contact with the sulphite liquor are made of ESCO Stainless Steel.



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Oregon and Washington Given Extra Fire Protection

• Representatives of the United States Forest Service, of Governor Langlie of Washington, and Governor Sprague of Oregon have presented the need for additional forest protection for certain critical areas in the Pacific Northwest to Congress and $500,000 has been allotted for this purpose, according to H. J. Andrews, assistant regional forester in charge of the Division of State and Private Forestry, who recently returned from Washington, D. C.

The protection will be placed in western Washington and Oregon, where the major defense activities are located. This area produces about seven billion feet of timber annually, or approximately 25 per cent of the national supply. About one-fifth of it goes to the defense program. It includes tremendously important power developments, shipyards, aircraft and aluminum factories, and manufacturing plants of all kinds. Army camps and maneuver areas and highways of military importance are located here.

A serious fire season could cripple the production of lumber and piling, damage transmission lines, and block roads. Airplane traffic might be grounded by dense smoke. Heavy calls on industry for fire fighters would slow down production. These funds will permit additional precautions against the usual hazards, as well as against extraordinary situations that may occur.

The money will be divided between the states and the federal agencies engaged in protection and will supplement funds already budgeted. The organization planned will consist of both large and small suppression crews, smokechasers, lookouts, prevention guards and inspectors. The suppression crews will be employed in the construction of protection improvements, between fire calls. They will be provided with trucks and will make quick responses to reports of fires. These crews, which will be organized, trained, equipped and ready to go, are much more effective than much larger pickup crews. Prevention guards will enforce closeures, check and register forest users. Inspectors will give particular attention to the provisions of the logging code and the state fire laws.

About 15% of the total is budgeted for special equipment, quarters and miscellaneous overhead items and supervision. Existing equipment and quarters will be used and large purchases will probably not be required.

The CCC will, as usual, be available for forest protection, but will serve as second line of defense. Logging crews will be called when needed as in the past.

The season is late, which permits time to organize. The plentiful rains have produced an extraordinary amount of grass and weeds which may be troublesome later, when they mature. Of course, not even a guess can be made at the kind of fire season we will have this year.

This should not be considered an all-out effort to meet a crisis, but these precautions are believed to be sufficient to prevent undue damage or delay to the defense program.

Donald Dodge Married

• Donald Dodge, millwright at Longview Fibre Company, Longview, Washington, married Gerda Hanson of New York on June 28th.

Brooks and Marlatt With R.C.A.F.

• William S. Brooks, only son of S. D. Brooks, president of Powell River Company and formerly a member of the head office staff of Powell River Company at Vancouver, has won his "wings" in the Royal Canadian Air Force and is now in training for overseas service.

Hobbs Marlatt, formerly accountant at Export Sales Company, representing Powell River Company in overseas markets, was last reported at Halifax. He, too, is with the R.C.A.F.

Paper Invades Competitive Fields

• Large increases occurred in the past decade in the production of paper products, sometimes at the expense of textiles or wooden products, but in other instances an apparent net gain in total manufacturing output resulted, reports the Department of Commerce.

Between 1927 and 1939 the value of paper bags rose while the value of textile bags declined. In 1927 the value of the paper bag production was $71,010,527 and in 1939 it had risen to $96,570,838. The value of textile bags in 1927 was $166,620,393 but in 1939 it had dropped to $110,504,136.

Paper and paperboard boxes and containers rose in value of products between 1927 and 1939, while wooden boxes declined. Concurrent with the increase in the use of corrugated-paper shipping containers has been a decline in the output of excelsior.

The value of paper and paperboard boxes and containers increased from $332,428,153 in 1927 to $448,347,697 in 1939, while the value of wooden boxes declined from $180,112,820 in 1927 to $126,019,405 in 1939; and, the value of excelsior declined from $4,953,630 in 1927 to $2,922,143 in 1939.

The value of paper towels more than doubled between 1927 and 1939, but during the same period the production of cotton towels and toweling fabrics also advanced substantially, possibly indicating the trend toward increased cleanliness among the American people. The value of paper towels produced in 1927 amounted to $6,098,813 while in 1929 it has risen to $15,352,399. Cotton towels and toweling produced in 1927 amounted to 169,997,031 square yards and in 1939 it had advanced to 245,034,951 square yards.

Paper cup production also expanded greatly during the 1927-1939 period, perhaps because of replacing the less sanitary metal drinking cup, and the output of gummed paper and tape doubled during the same period, its popularity being due to speed and convenience in wrapping.

The value of the paper cups produced in 1927 was $6,413,480 and in 1939 the value was $17,412,990. Gummed tape worth $8,241,670 was produced in 1927 and $16,555,744 worth produced in 1939.

Vic Gault Broadcasts For Paper Festival

• Victor Gault, personnel supervisor of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, broadcast over radio station KVAN, Vancouver, Washington, June 24th, in behalf of the Camas Paper Festival.

Soundview's Six Month's Profit Declines

• For the six months ended June 30th, the Soundview Pulp Company of Everett, reported a net profit of $976,473 after all charges including depreciation, depletion, normal income taxes and estimated excess profits defense tax, equivalent, after regular dividends on the preferred, to $1.87 a share on 488,250 shares of common stock outstanding.

This compares with a net profit of $1,-161,223 in the corresponding period of 1940, equivalent to $2.24 on the common after preferred dividends.

Net profit for June totaled $161,111 or 31 cents a share as against $147,012 or 28 cents a share in the preceding month and $206,246 or 40 cents in June of 1940.

Soundview produced 93,149 tons of pulp in the first half of 1941 or 4,320 tons more than the 88,829 tons produced in the first six months of 1940. Output for June totaled 15,556 tons as against 15,783 tons the preceding month and 15,432 tons in June of 1940.

Sales for the first six months of this year aggregated 93,650 tons, compared with 93,766 tons in the like 1940 period. The company sold 16,177 tons in June of this year compared with 16,039 tons in May and 14,602 tons in June of 1940.

Hawley Further Reduces Dividend Arrearage

• The Hawley Pulp & Paper Company of Oregon City, Oregon, has announced that a dividend on its $7 preferred stock will be paid on August 1st to holders of record July 21st. On May 1st and July 1st the company paid similar dividends, showing the steady progress being made toward elimination of the heavy arrearage against the preferred.

After the August 1st payment a total of $17.50 will remain against the preferred, two full years and the first half of 1941. The Hawley mill is running at capacity and in June set a record with 8,000 tons of paper produced.

Art Zimmerman On Vacation

• Arthur Zimmerman, vice president and general manager of the Pacific Paperboard Company, Longview, took two weeks vacation starting the middle of July following his return from an Eastern trip.

While he was away his father, Max Zimmerman of Lockport, N. Y., looked after operations at the mill in the capacity of consulting engineer. The senior Zimmerman is an experienced board manufacturer having been with the United Paperboard Company many years.

Stebbins Moves Seattle Offices

• The Stebbins Engineering Corporation of Seattle, lining engineers, whose offices have been at 1201 Textile Tower, moved on July 1st to 903 in the same building. The telephone number remains the same Seneca 0366.

The Stebbins Engineering Corporation, of which A. S. Quinn is vice president, is a subsidiary of the Stebbins Engineering & Manufacturing Company of Watertown, N. Y.

Program Announced For Fall TAPPI Meeting

At the University of Michigan, Ann Arbor, Michigan, September 16th-19th.

● Plans are progressing for a very interesting Fall Meeting of TAPPI at Ann Arbor, Michigan, September 16th-19th inclusive. Headquarters will be at the University of Michigan.

General Chairman Ralph A. Hayward has announced a tentative program which is given below in detail.

One of the interesting points of the 1941 meeting is that accommodations are being provided in the Residence Halls of the University of Michigan at very low rates—$1.25 per person in a double room and $1.75 for a single room. Reservations should be made directly with C. A. Fisher, director of extension service, University of Michigan, Ann Arbor, Michigan.

On Monday, September 15th, the mills in Kalamazoo, Detroit, Ypsilanti and Port Huron will hold open house and will welcome visitors.

Pacific Coast Group

● A number of men from the industry on the Pacific Coast are un doubtedly planning to attend the Ann Arbor meeting and A. H. Hooker, Jr., of the Hooker Electrochemical Company, Tacoma, asks that they get in touch with him so the Coast group can plan to travel together. Mr. Hooker was appointed western member of the transportation committee.

The tentative program released on July 3rd is as follows:

Tuesday, September 16th

7:30-8:30 a.m.—Swim and breakfast.

8:00—Registration at Michigan Union and throughout day.

9:00—General Session—Rackham Lecture Hall. Welcome: Dean Crawford, University of Michigan. Reply: W. H. Swanson, president, TAPPI.

9:30—"The Paper Industry in the National Emergency"—D. C. Everest or C. W. Boyle, Office Production Management, Washington, D. C.

"Paper Prices"—Herbert Taggert, Price Control Division, O.P.M.

11:00 — "International Economics," Virgil Jordan, chairman, National Industrial Conference Board.

1:00 p.m.—Luncheon Meetings—All in Michigan Union.

1. General Interest Meeting—Personality in Sales," Arthur Seccord, University of Michigan.
2. Pulp Bleaching—D. T. Jackson, chairman. Symposium on Oxidation of Cellulose.
3. Biological Control of Food Protection Papers.
4. Coated Papers.
5. Surface Sizing.

3:30—Recreation and Campus Tours—Golf, baseball, skeet, tennis, riding, swimming, football practice. Local section competitive teams to be organized in golf and baseball.

Coffee Hour in Michigan Union Tap Room.

7:30 — Dinner - dance in Michigan Union Ballroom.

9:00—Carnival Night—Prizes for all and dancing, bridge, pool, ping pong, etc.

Wednesday, September 17th

7:30-8:30 a.m.—Swim and breakfast.

9:00—General Session—Rackham Lecture Hall. Employee Relations Symposium, Prof. Haber, University of Michigan; Sherman Rogers, lecturer.

11:00 — Employee Relations — W. J. Cameron, Ford Motor Company.

1:00 p.m.—Luncheon Meetings at Michigan Union.

1. General Interest Meeting—"Keeping Your Balance," Dr. Yoder, Michigan State Hospital, Ypsilanti, Michigan.
2. Materials of Construction: Protective Coatings," Hercules Powder Company; "Metal Substitutes," A. E. White, University of Michigan; "Nickel Substitutes," T. E. Lagerstrom, International Nickel Company; "Discussion of Plant Maintenance," Percy Tugwell of Beloit Iron Works, and Charles Gibbs, Kalamazoo Vegetable Parchment Co.
3. Papermaking Pigments: "Colloidal Aspects of Pigments," F. C. Bartell, University of Michigan.
4. Fundamental Research: H. F. Lewis, chairman. "Oxidation of Cellulose," W. O. Kenyon, Eastman Kodak Company; "Holocellulose," G. J. Ritter, Forest Products Laboratory.

3:30—Recreation and Campus Tours.

3:45—Phisical Analysis Symposium, University of Michigan, Physics Building.

1. Electron Microscope: Dr. Duffendack, University of Michigan.
2. Electron Diffraction: Dr. Brockman, University of Michigan.
3. Spectographic Analysis: Dr. Sawyer, University of Michigan.

7:30—Dinner and Dancing at Michigan Union Ballroom.

9:00—Pageant — Parade of Science, Lydia Mendelssohn Theatre. Demonstrations by: Dupont, General Motors, General Electric Co. and Libby-Owens-Ford Glass Company.

Thursday, September 18th

7:30-8:30 a.m.—Swim and breakfast.

9:00—General Session—Rackham Lecture Hall. Research Symposium.

1. "Academic Research," Dr. Arthur Compton, University of Chicago.
2. "Development Research," Prof. A. E. White, University of Michigan.

11:00—"Industrial Research," C. F. Kettering, General Motors Corporation.

12:30 p.m.—Luncheon at Michigan Union.

2:00—General Session at Rackham Lecture Hall.

1. "Hybrid Poplars"—Phelps Vogelsang, Dow Chemical Company.
2. "Increasing Power Plants to Meet Demands of National Defense," Dean R. S. Hawley, Mech. Eng. Dept., University of Michigan.
3. "Pattents," C. W. Rivise, Philadelphia, Pennsylvania.

4:00—Recreation Period.

7:30—Dinner and Dancing at Michigan Union Ballroom.

9:00— Theatre Program —"The Male Animal," Kalamazoo Civic Players, Lydia Mendelssohn Theatre, Michigan League Building.

Friday, September 19th

7:30-8:30 a.m.—Breakfast.

8:30—Visit to Ford Motor Company.

9:00—Visit to Greenfield Village, Dearborn, Michigan.

12:30 p.m.—Luncheon at Dearborn Inn.

Women's Program

Tuesday, September 16th

11:00 a.m.—"International Economics," Dr. Virgil Jordan, National Industrial Conference Board, Rackham Lecture Hall.

1:00 p.m.—Luncheon in Michigan League Building. Speaker: Dean Alice Lloyd, University of Michigan.

2:30—"Book Review"—Amphitheatre in Rackham Building, Miss Olive Dean Hormel, University of Michigan.

3:25—"An Arbor Gardens Through the Seasons," colored pictures—Prof. Wesley Mauer, University of Michigan.

4:00—Campus tours, bridge, coffee hour at Michigan Union.

4:30—Tea in Michigan League Gardens.

7:30—Dinner and Dancing at Michigan Union.

9:00—Dancing and Carnival with prizes for all.

Wednesday, September 17th

11:00 a.m.—"Employee Relations"—W. J. Cameron, Ford Motor Company.

1:00 p.m.—General Luncheon at Michigan Union.

"Keeping Your Balance"—Dr. Yoder, Ypsilanti State Hospital.

4:00—Musical and Tea — Michigan League Building.

7:30—Dinner and Dancing at Michigan Union Ballroom.

9:00—Pageant — Parade of Science, Lydia Mendelssohn Theatre, Michigan League Building.

Thursday, September 18th

11:00 a.m. — "Industrial Research," C. F. Kettering, General Motors Corp.

1:00 p. m. — Luncheon in Michigan League Building.

Speakers: Mrs. Pettingill, past national president, Parent - Teachers Association, and Mrs. Gerritt Diekma, wife of former ambassador to Holland.

2:45—Lecture with colored pictures—

"Trip Down the Colorado River," Dr. Elzada Clover, University of Michigan.

4:00—Campus tours, bridge, coffee hour at Michigan Union.

7:30—Dinner and Dancing at Michigan Union Ballroom.

9:00—Theatre Production — "The Male Animal," Kalamazoo Civic Players, Lydia Mendelssohn Theatre, Michigan League Building.

Friday, September 19th

7:30-8:30 a.m.—Breakfast.

9:00—Visit to Greenfield Village, Dearborn Michigan.

12:30 p.m.—Luncheon at Dearborn Inn.

B. C. Overseas Export Business Declines

● Export business is being placed in a subordinate category by British Columbia pulp and paper companies just now, with the domestic market demanding everything that can be produced.

Before the war companies such as Powell River Company and Pacific Mills welcomed overseas trade as a means of balancing revenues and stabilizing production, but after twenty months of war very little selling is being done abroad and the pulp and paper manufacturers have no regrets provided that the exports will come back again when peace is restored.

Major market for both pulp and paper from British Columbia today is the United States. Shipments of pulp continue to Australia, where it is being combined with native gum woods in the manufacture of newsprint, and some kraft is being shipped to South Africa and South America in limited quantities; but the volume of overseas sales of newsprint has been greatly restricted.

Some newsprint is still being shipped to Shanghai and Hongkong, but none is going to Japan and there has been a complete blackout in sale of pulp to Japan, due to government embargo.

"There are half a dozen good reasons why we are not worrying our heads about export business just now," remarked a Vancouver newsprint executive in discussing the situation with Pacific Pulp & Paper Industry. "In the first place we are finding a ready sale for all we can produce in Cananda or the United States, and, all things being equal, we would rather cater to the markets closest to home. Then there is the difficulty of getting delivery to the more distant markets; the shipping shortage has intensified that. Then there is the question of payment. We haven't encouraged sales to Japan, for instance, because of the credit difficulties."

Government orders in curtailing consumption of newsprint have been a factor in cutting down exports in some cases. Great Britain, Austrlia and New Zealand have imposed arbitrary restrictions on newspapers.

The long-term contract with Australian publishers continues, and Powell River Company and Pacific Mills are still making rationed shipments to that market with other Canadian exporters. This agreement originally called for shipments of around 175,000 tons a year over a period of seven years.

It is expected that, while last year's deliveries to Australia were normal, sales will not exceed 75,000 tons this year.

India and the Middle East have been largely eliminated by the long water haul, high freight costs and lack of ships. South Africa with its high purchasing power owing to heavy gold production would be able to pay the high costs necessary for importation of B. C. pulp and paper, but its purchases have been affected adversely by ship space shortage. Pulp and paper are bulky freight and are classified far down in the priority list, with munitions and foodstuffs taking first place.

Canadian pulp and paper exporters feel that the situation in South America has been greatly improved by provision of additional sailings by the U. S. Maritime Commission and the freezing of rates from New York to South American ports. But so long as markets nearer home continue strong not much selling attention is being diverted south of the United States at present.

Everett Building New Office

● The Everett Pulp & Paper Company of Everett, Washington, is constructing a modern office building of concrete and brick, 45 by 72 feet, two stories with a full basement. It will be completely air conditioned.

Work is already under way by the contractors, Howard S. Wright & Company of Seattle.

Swedish Ship Losses

● Since the outbreak of the war and up to the end of February this year, Sweden lost 83 vessels aggregating 199,500 gross tons by war actions, reports the U. S. Department of Commerce. In addition, 7 fishing vessels were lost totaling 313 tons.

Besides the above Sweden has lost 26 vessels totaling 46,900 tons through the actions of prize courts which confiscated them and transferred the ships to foreign ownerships.

Three Camas Employees Married in June

● Three employees of the order department of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, were married during the past month. Harry Larsen was wedded to Marion Blackwell on June 29, Wallace Kohl married Venola Crippen, July 2nd and Maxine Smalley was wed to Leslie Willms on July 19th.

Harold Wall Vacations In Mountains

● Harold Wall, chief chemist, Longview Fibre Company, Longview, Washington, spent the last week of June vacationing with his wife and children in the Cascade mountains. They visited Mt. Baker and Mt. Rainier.

KALAMAZOO VEGETABLE PARCHMENT CO.

PARCHMENT
KALAMAZOO
MICHIGAN
U.S.A.

OFFICE OF
R. A. HAYWARD
PRESIDENT

July 8, 1941

Mr. Lawrence K. Smith
Pacific Pulp and Paper Industry
71 Columbia Street
Seattle, Washington

Dear Mr. Smith:

Last fall I had the pleasure of attending the fall meeting of TAPPI in Seattle. I was greatly impressed by the facilities that were available at the University of Washington as well as in the city of Seattle.

The entire program was handled in a very excellent manner and will long live in my memory.

This year the fall meeting will be held on the campus of the University of Michigan which will have the same cultural environment that we enjoyed last year in Seattle. I am sure everyone will find the facilities equal to the standards of your University.

Our committee is making a supreme effort to arrange for a very strong program which should appeal to all those connected with the industry. We cannot show you the large trees and forests that you have on the West Coast but we can show you the largest automobile plant in the world, and we are arranging to do this by visiting the Ford Motor Company the last day of the convention.

I am enclosing a tentative program of the convention. When you read this through, I am sure you will agree with me that it is worth travelling across the country to attend. We hope you can spread the news of this excellent program among the members on the West Coast so that we will have a fine representation here in September.

With kindest regards.

Sincerely yours

R. A. Hayward

RAH:WN

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BEAR BRAND CHEMICALS

Pacific Coast Products

BEAR BRAND chemicals for the paper industry are made by the Great Western Division of Dow—the largest plant of its kind on the Pacific Coast.

West Coast sources of labor—West Coast raw materials are used to produce chemical products the paper industry has come to depend on for uniform high quality.

Take advantage of the economy in time and operating efficiency afforded by Great Western's location and specify BEAR BRAND chemicals.

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CHLORINE

Liquefies at -34.6°C. atmospheric pressure. Not over 1.4 lbs. moisture per ton. Total residue not over 15 grams per 100 lbs.

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SULPHUR DIOXIDE

Colorless gas at normal temperatures and pressures, liquefies at -10°C. at atmospheric pressures.

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ANHYDROUS AMMONIA

Liquefies at -33.4°C. atmospheric pressure. Contains no objectionable impurities.

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ZINC HYDROSULPHITE

A fine white powder. Easily oxidizable in air. Very slightly water soluble.

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Progress in the Paper and Paperboard Industries

by BRUCE F. BROWN, Sr.*

IN the brief span of the lives of most of us who are here this evening, more changes and developments have taken place in science and industry than in all the years of written history. Our industry, that of pulp and paper manufacture, is no exception.

The origin of paper, like that of spinning and weaving, tanning of leather, the making of pottery and glass and the refining of certain ores, goes back so far in history as to be almost legendary.

I assume you are familiar with the story of the invention of the Fourdrinier and Cylnder paper machines around the beginning of the nineteenth century. In fact, I believe the year 1803 is credited with these inventions. You know the great varieties of papers and paper boards that are now produced and the various products made from these materials. You konw how the making of paper by machinery extended the production of books, periodicals and newspapers, and assisted in the exchange of ideas that has enlightened the whole world.

At one time the written or printed page was practically the only means of communication between peoples and the rapidity of communication was governed by the speed of the transportation of the time, such as the stage coach, sailing ship or railroad. Communication was speeded up when the telegraph and telephone were invented and was made almost instantaneous through the development of the radio. Transportation likewise is now extremely rapid since man has learned to fly through the air. With all of these great and rapid changes there have been no inroads in the use of paper. It increases as civilization advances.

For a time after the invention of the paper machine, its development was rather slow and it was some twenty or thirty years before any real effect of the invention was apparent. Small mills for producing writing and printing papers began to appear on the streams in the states on the Atlantic Seaboard. Their raw materials were rags and straw and a site was selected on a stream where both water and water power were available.

After the Civil War, the agricultural states in the Middle West where wheat was grown extensively saw another development in paper manufacture. Wheat straw was converted into straw wrapping paper. The relatively simple process of cooking straw in a milk of lime solution produced a dark colored pulp that could easily be made into straw wrapping paper on a cylnder machine and many small mills turned out this product which was principally used in the butcher's trade. Incidentally, if the sizing had been faulty one might have found his beefsteak on the outside of the wrapper.

The cylinder machine, as you are aware, can have a multiple of cylinders each producing a single ply which can be united into one heavier sheet. Straw pulp in wet layers unites quite easily so it was a short step from butchers' wrapping paper to straw board.

The advent of strawboard was the real beginning of the paper box industry. It is true some paper boxes were made out of board produced on wet machines prior to this time but the amount was so small as to be almost negligible. These first straw board paper boxes were of the set-up type where the lid is separate from the body of the box. They were used primarily for stationery, shoes, shirts and collars, hardware, candy and a few similar articles.

Wood Displaces Straw

● In the late sixties and early seventies, the straw paper industry was faced with a serious competitive condition. Wood pulp had been developed and the forests offered a material for paper manufacture similar to the material the wasp had been using for building his paper nest from time immemorial. By grinding wood against a stone mechanical woodpulp was made. By cutting it into small chips and cooking it in a soda solution or in bisulphite of lime, soda pulp and sulphite pulp were produced.

It was found the softer wood of the non-coniferous trees lent itself more readily to the soda process while the sulphite process produced harder and stronger fibre. Both chemical pulps could be easily bleached so an abundance of raw material for producing white papers was at hand.

Wood pulp was found to be the ideal raw material and it was not long after its development that the paper industry began to make real strides. Newsprint and manila paper mills were built on the rivers in the forests of all of the Northern states but principally in Maine, New York and Wisconsin. The size of the mills were larger and the machines were increased in width, speed and tonnage.

In some of the foreign countries, esparto grass which grows in Spain and Northern Africa was used for making book paper and jute bags and jute butts were used for making manila wrapping paper. Several ship loads of Yucca from our California desert were sent to England in the search for suitable fibre for making book paper. Manila paper made from wood pulp is a misnomer and it derived its name from the similarity in appearance to the genuine manila paper.

Manila paper being stronger, lighter in color and uniform in smoothness and appearance found its way into the wrapping and paper bag field. Straw wrapping paper was doomed and one of the early developments in the industry in the straw producing states referred to above was forced out of existence.

A number of the straw wrapping mills converted their plants into straw board mills and survived for a time in this field. Today about the only straw paper that is used is nine point corrugated material. A nine point straw sheet is very suitable for this purpose but it is rapidly being replaced by kraft paper and is threatened with the same dire fate as its kindred straw wrapping paper.

The straw board mills flourished in their turn and were replaced by board made from waste paper, or paper stock as it is more appropriately termed, and from new wood pulps. Straw board was only suitable for setup boxes. Chip, news and pulpboards opened up a new field, the folding box and the shipping case. The folding box due to the fact that it can be delivered in a folded condition as its name ap-

*District Manager, Fibreboard Products Inc., Los Angeles, Calif. Presented at the second meeting of Papermakers and Associates of Southern California, in Los Angeles on the evening of June 11, 1941.

840" FITCHBURG" SCREEN PLATES

In the World's Largest Unbleached Sulphite Mill

We are proud of the fact that Puget Sound Pulp & Timber Company, the world's largest unbleached sulphite mill, uses Fitchburg NEW TYPE-DUPLEX SLOT Screen Plates.

Recent capacity tests on these improved plates show capacity beyond all others. In these days when maximum production is vital to all of us, Fitchburg NEW TYPE-DUPLEX SLOT plates are turning in records on every type of pulp, paper and board. They are screening the pulp for the Powder Mills in National Defense. Such preference must be deserved.

FITCHBURG SCREEN PLATE CO., Inc.

FITCHBURG, MASS.

Pacific Coast Representative: KENNETH B. HALL, 816 S. E. TAYLOR, PORTLAND, OREGON

plies, and thus takes little storage space, together with its ability to be opened up and filled by automatic machinery has proven its worth for the packaging of many lines, such as food products, etc.

The raw material for folding boxes, being principally graded paaper stock comes from the larger centers of population so folding box board mills are found in and near our cities. It would appear that this type of paper manufacture which reclaims and conserves waste material should be permanent but judging from the replacements that have taken place since the paper machine was invented, one cannot be too sure.

I referred to the shipping case and its coming into the field along with the folding box. The shipping case is in reality a large heavy folding box and is made in two general styles, solid fibre and corrugated. The solid fibre box is made of several single plies pasted together with silicate of soda or starch while the corrugated box is made of outer and inner layers with a corrugated sheet between them. This corrugated medium is pasted on its flutes to the outer layers.

The chip board mills along with other grades produce a board for the outer layers of both the solid fibre and corrugated containers that is called jute. Another misnomer by the way. This jute is ordinarily sixteen points in thickness, of a brown color, tests 100 pounds on the Mullen tester, weighs from 64 to 68 pounds per 1000 sq. ft. and is made from selected strong paper stock supplemented with new wood pulp.

I must digress here to tell about another process for making chemical wood pulps that came into use some years after the soda and sulphite processes. It is a combination of the two processes and the pulp is known as kraft pulp.

This process makes an extremely strong hard fibre and trees not suitable for sulphite pulp, such as Southern slash pine produce excellent kraft pulp.

In the past five or six years the greatest strides in the industry have been the production of kraft pulps and papers in the Southern states. Kraft wrapping and bag paper and kraft board for shipping cases have to a great extent supplanted the manila wrapping paper and jute board. These Southern mills are the latest word in modern pulp and paper development. Single machines turn out twenty tons an hour of sixteen point kraft liner board, a carload an hour. Contrast this with the straw board machine of the eighties turning out seven to ten tons in twenty-four hours.

Kraft board, on account of greater strength and very much lighter weight and corresponding cheaper cost per unit of area, has replaced much of the jute that was formerly used in shipping case manufacture. A number of Northern paper companies sold their board mills in exchange for kraft board to be taken over a period of years.

The review I have given you would tend to show quite an unstable condition in the paper industry and to a degree that is correct. Some lines, such as writing, book, news, tissue and roofing felts have undergone less changes than paper board, wrapping and bag papers. Newspaper, while practically the same in composition, has gone out of the Northern states to a large extent on account of the wood supply being depleted. They are now mostly in Canada and the Pacific Northwest.

Education Has Changed, Too

● At one time the only way to learn the art of paper making was in the school of "hard knocks" and the old time superintendent ran the plant very much like the captains of sailing ships. They were a law unto themselves. They kept their secret formulas in small record books that no one was allowed to see. Machine tenders were equally reluctant to pass on information to those working under them. They had the mistaken idea that if they allowed what information they possessed to get out to others, they might soon be supplanted and be looking for another job. They did not realize that one who is able to direct and instruct others makes his own job easier and safer and that he is in line for promotion. They had little or no technical knowledge and technical control had no place in their mills. Books on the subject were practically non-existent.

Today there are several universities offering courses in pulp and paper making and certain progressive mills maintain the Institute of Paper Chemistry. Organizations, such as TAPPI and the American Pulp & Paper Mill Superintendents Association, exchange helpful information, and there is now what might be termed a paper mill fraternity among mill operators. Some mills conduct schools and graduate their students after completing the prescribed course of study. A notable example of this is the school at the mill in Camas, Washington. Their text book was developed by their technical men and is a real contribution to the limited published material in our field.

California Organization Timely

● Your organization is intended to assist its members through the exchange of information that you have acquired and it should do much to promote interest in your work, help you in your problems and to keep up with the new developments. It has another side which is the social pleasures derived from having dinners together and in giving some time to the less arduous subjects of the meetings. There are now a number of paper mills in this area and the forming of an organization of this kind is timely. I wish you all success.

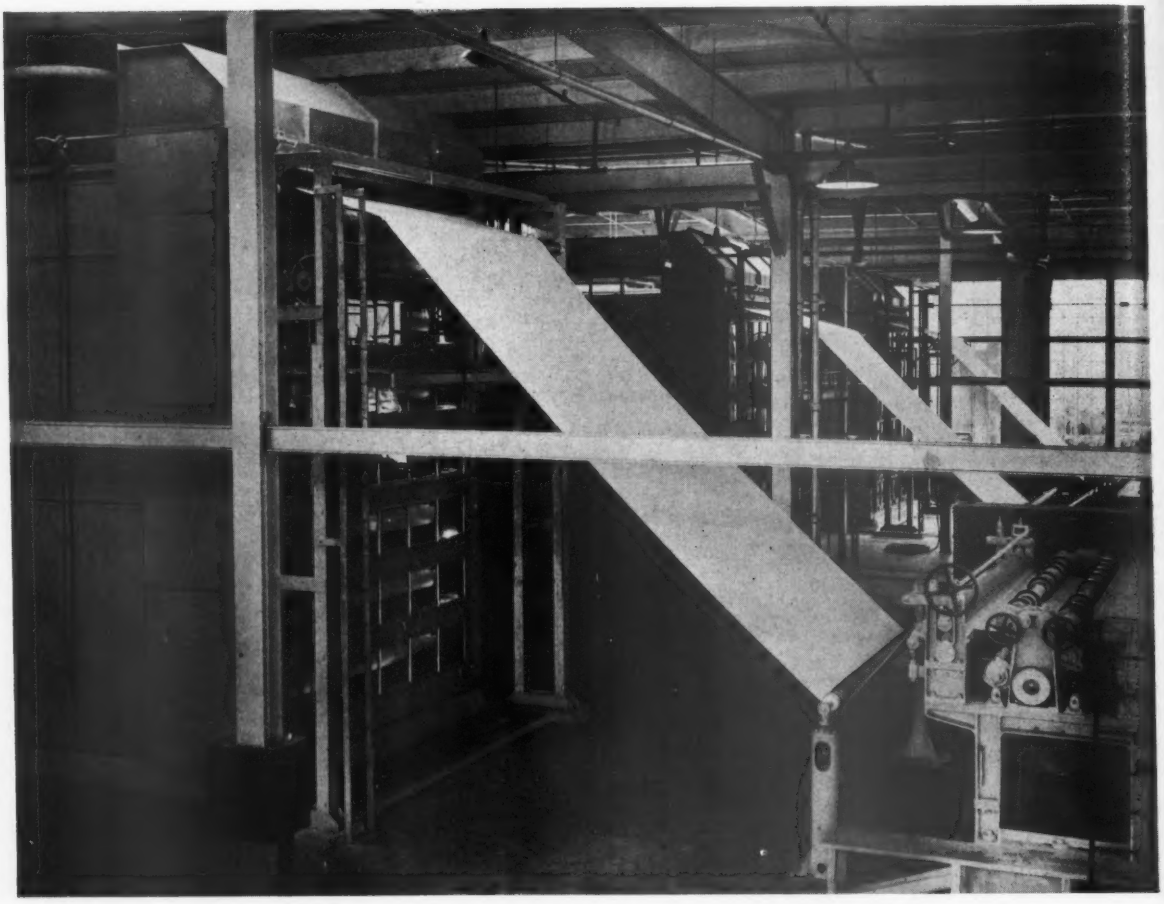
Argentina Buying Pulp From U. S.

● The war's dislocation of North European trade routes has caused Argentina to turn to the United States for a greatly increased proportion of her wood pulp requirements, reports the Department of Commerce.

In 1940 the United States supplied 12,126 metric tons of this item to the Argentine market, or approximately 34 per cent of the total imported in that year, as against 2,015 tons and 4 per cent in 1939. A noteworthy feature of this trade is the fact that all of the wood pulp imported by Argentina during the past two years for the manufacture of rayon has been obtained from the United States.

Two types of pulp are produced in Argentina, one being made from wheat straw and the other from wood. In 1940 production of the former totaled about 26,000 metric tons and of the latter 5,000 tons.

BRUCE F. BROWN, Sr., District Manager, Fibreboard Products Inc., Los Angeles, who spoke before the Paper-Makers & Associates of Southern California.



A THIRD FLAKT *for* PUGET SOUND

Arrangements have been made for the construction of FLAKT DRYERS on the Pacific Coast.

With the installation of the THIRD FLAKT PULP DRYER in the unbleached sulphite pulp mill of the PUGET SOUND PULP & TIMBER COMPANY at Bellingham, Washington, a total of EIGHT FLAKTS are now operating on the Pacific Coast, including two of the vertical type.

The FLAKT PULP DRYER possesses several outstanding advantages—

Less loss of strength and color in drying for in the FLAKT DRYER the pulp is dried without contact with hot metal surfaces.

Guaranteed steam consumption of 1.3 pounds per pound of water evaporated in the FLAKT DRYER, and in many operations the consumption is even lower.

Saves money in building construction—No dryer pit is needed nor are heavy foundations required.

The FLAKT Patented Ventilation and Hot Water Recovery System extracts heat from the exhaust air to provide hot water for the fourdrinier—paying for itself in less than one year.

Saves money for paper mill users for FLAKT dried pulp absorbs water more rapidly reducing power consumption in the paper mill.

For detailed information on the FLAKT PULP DRYER address our Pacific Coast representative.

AB SVENSKA FLAKTFABRIKEN

STOCKHOLM, SWEDEN

A. H. LUNDBERG, Pacific Coast Representative, 3311 First Ave. So., SEATTLE

Trade Talk

of Those Who Sell Paper in the Western States

B M & T Promotes Gruner and Westler

● Mr. O. W. Mielke, general manager of Blake, Moffitt & Towne, recently announced the appointment of J. A. Gruner to the position of sales manager of the printing paper department for Northern California. Formerly San Francisco printing paper sales manager, Mr. Gruner will now concentrate his attention on the coordination of sales of printing papers in the San Francisco, Oakland, Sacramento, Fresno, San Jose, and Stockton territories. H. P. Westler, assistant sales manager since 1937, has been appointed to fill the position of San Francisco city sales manager.

Mr. Gruner has had a wide experience in the paper business and has a thorough knowledge of the requirements of the trade. He has been associated with the industry for the past thirty-two years, being connected with Blake, Moffitt & Towne since 1910. He is past president of the San Francisco Club of Printing House Craftsmen and an active member of the San Francisco Advertising Club.

Mr. Westler is well qualified for his new position of city sales manager. Prior to joining the Blake, Moffitt & Towne organization some seventeen years ago, he was in the Bureau of Engraving in Minneapolis and later with the Seaman Paper Company, also in that city. In 1924 he came to San Francisco and has been with Blake, Moffitt & Towne since that time. He was made manager of the San Luis Obispo division in 1928 and in 1930 he returned to San Francisco. As assistant printing paper sales manager, Westler had the responsibility of developing new sales potentialities and was also actively engaged in assisting the salesmen in the field.

J. A. Gruner, Sales Manager, Printing Paper Dept. for Northern California, Blake, Moffitt & Towne

H. P. Westler, San Francisco City Sales Manager, Printing Paper Dept., Blake, Moffitt & Towne

Fairchild Commutes Between Envelope Plants

● Joseph S. "Joe" Fairchild, Pacific Coast manager of the U. S. Envelope Company, has developed into quite an air commuter. He spends part of his week at the Pacific Coast Envelope Division in San Francisco, hops a plane and flies down to Los Angeles to spend the rest of the week at the company's U. S. Envelope Company Los Angeles Division.

Mr. Fairchild states that the new Los Angeles plant is in full production, and in fact has hit a peak with the first of July that they hadn't expected to reach for an entire year. He states that the Self Seal envelopes and stationery that the company manufactures have helped to lift the volume considerably.

The company, anticipating further expansion, has bought enough more land to erect a plant five times the size of the new Los Angeles factory.

Vernon McIntyre Now in Los Angeles

● Vernon McIntyre, formerly with the San Francisco Division of the Zellerbach Paper Company, is now with the Los Angeles division of the company.

James Murphy Wins Section Award

● James W. Murphy of Carter, Rice & Company, Corporation, Portland, was the Pacific Coast winner of National Paper Trade Association's recent Paper Trade Parade Sales Campaign. Mr. Murphy receives a gold "National Paper Trader" button.

Letters were submitted on sales subjects, the winning letter dealing with the keeping of salesmen's records. The first prize of an all-expense trip to the National Paper Trade Association convention was won by Benjamin Volk of the H. J. Dowd Company, Inc., Cambridge, Massachusetts.

Koss Supply Moves To Larger Quarters

● Due to increased business the Paul Koss Supply Company, San Francisco, is moving to a new and larger building at the corner of Fifth and Folsom streets. Two new streamlined trucks have been added and a larger telephone exchange.

Roy Patten Visits Mainland

● Roy Patten, head of Patten Company, Ltd., Honolulu, T. H., was in San Francisco recently for an extended stay. The Patten company is one of the oldest paper houses in the Islands. Recently the firm added a new story to their wholesale paper building.

"Flash" Gordon's Mother with Zellerbach

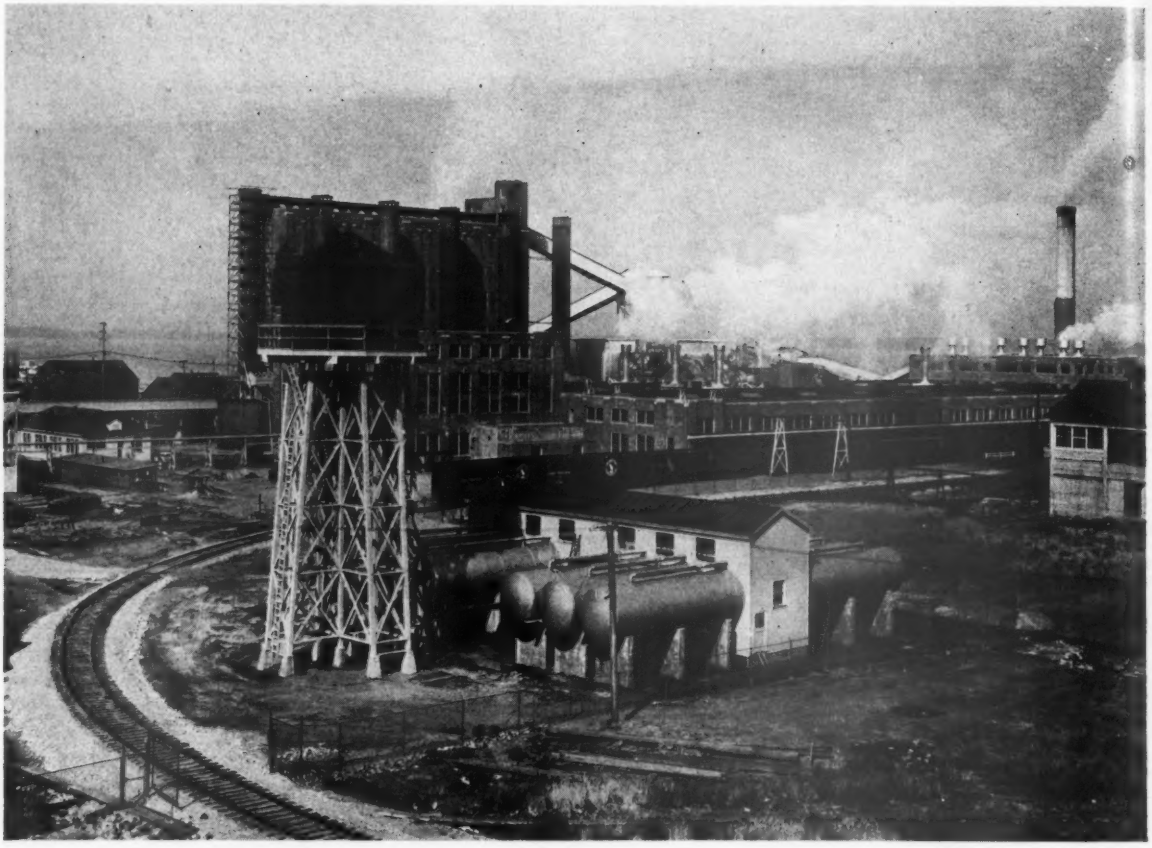
● Mrs. Louise Gordon of the Portland Division office of the Zellerbach Paper Company is mighty proud of her son Joe. And well has she cause to be for he is the mighty Joe "Flash" Gordon, who is setting the American League afire with the New York Yankees.

Cupples Company Moves Los Angeles Offices

● Charles Spies, sales representative of the Cupples Company, manufacturers, of St. Louis, announces that Los Angeles headquarters of the firm were moved to 941 East Third Street on July first.

Cook Named Zellerbach San Diego Manager

● Albert Cook, for many years with the San Diego Division of the Zellerbach Paper Company, has been made manager of that division, succeeding F. M. Boyer, who has been transferred to the Los Angeles Division.



The 16,000,000 Gallons Per Day Pressure Filter Plant at Bellingham

PUGET SOUND DOUBLES FILTER PLANT

THE FLEXIBILITY of the Northwest Filter Company's pressure filter design is shown by the ease with which the 8,000,000 gallons per day plant of the PUGET SOUND PULP & TIMBER COMPANY at Bellingham, Washington, built in 1939, was expanded this year to provide twice as much clean, pure water for the increased capacity of high quality unbleached sulphite pulp.

Six duplicate pressure filter units were installed, connected to the original six and the plant was ready for service on a 16,000,000 gallons per day basis.

NORTHWEST FILTER COMPANY

Representing—The Bristol Company; Hall Laboratories, Inc.; Hagan Corporation; Calgon, Inc.; Goslin-Birmingham Mfg. Co., Inc.; Del Monte Properties, Inc., and Jos. Wagner Mfg. Co.

Water Treatment Engineers

— 122 ELLIOTT AVE. W., SEATTLE — GA. 7700

214 LEWIS BLDG. PORTLAND AT. 5980

Burch Named Carter Rice Wrapping Manager

● Floyd Burch, who has been with Carter Rice & Co., San Francisco, for a number of years, has been made manager of the wrapping paper department.

His brother, Clifton, has taken over Floyd's job in the order department. Clifton was formerly in the paper business in Los Angeles.

Goodwin Visits Zellerbach Headquarters

● Fred Goodwin, sales manager of the Kansas City Division of the Zellerbach Paper Company, accompanied by Mrs. Goodwin, visited headquarters in San Francisco, and several other divisions, as well as mills of the Crown Zellerbach Corporation, on a recent trip west.

Bruce Garrison, wrapping paper sales manager of the Kansas City Division will make the same trip next month.

Hecht on Summer Speaking Tour

● V. E. Hecht, vice-president of the Zellerbach Paper Company, had five speaking dates during the early summer. His topic was "Showmanship and Selling" and he spoke before the San Jose Chamber of Commerce, the San Jose Junior Chamber of Commerce; the Graphic Arts Club of Oakland; the Graphic Arts Club of San Francisco, and the Phoenix (Arizona) Craftsmen's Club.

Zellerbach Represented At Ad Club Convention

● Zellerbach Paper Company representatives at the Advertising Clubs convention at Santa Barbara were Neal Lindsay, Los Angeles Division; Archie Munson, San Francisco Division; Mrs. Glory Palm, and Miss B. Shapiro, San Francisco Headquarters Division.

Colton Returns From Chicago Meeting

● Louis A. Colton, vice-president of the Zellerbach Paper Company, San Francisco, is back at his desk after attending the twenty-sixth annual convention of the National Purchasing Agents Association at Chicago. Mr. Colton stopped off at the Los Angeles Division of the company on his way home.

Timmerman Transferred To San Francisco

● Dolph Timmerman is now connected with the San Francisco Division of the Zellerbach Paper Company as assistant to Finley Hunt, wrapping paper sales manager.

The Santa Rosa territory formerly handled by Mr. Timmerman is now being covered by O. W. Townsend.

Bud Parsons Called To Active Duty

● W. B. "Bud" Parsons, vice president of the Pacific Waxed Paper Company of Seattle, with offices in San Francisco, has been ordered to active duty as a major in the United States Army.

He reported to Fort Ord, California, July 16th for a year or more of service.

Commercial labels for Army and Navy Canned Goods

● Labels for canned goods to be sold the army and navy, according to present indications, may be expected to be just the same as those used for regular commercial sale.

With the development of the present emergency, there was some debate as to whether or not it would be necessary to develop a special type of label for the armed forces. It was felt the federal government might establish special labeling requirements, that there might be a shortage of paper, or that lithography plants might become overloaded.

None of these eventualities has become an actuality, nor do any of them promise to do so in the near future. The government's requirements on labeling for army and navy purchase have simply been that all foods bear labels which comply with U. S. Food, Drug & Cosmetic Act, and this already is demanded of foods passing through normal commercial channels.

There is no indication of any serious approaching shortage of paper. Although Scandinavian imports of pulp have been cut off, and Russell L. Maxwell, administrator of export control, recently has announced that exports of wood pulp will be permitted only under license, paper-producing capacity of the country continues to be sufficient for all major needs. If a shortage should develop, there are undoubtedly many other fields in which savings could be accomplished more easily than in the case of labels.

Likewise, there is no serious undersupply of skilled labor in the graphic arts trades. Nor would a reduction in workers in this field release men trained in lines useful in national defense.

On the other hand, it is desirable from the standpoint of food packers that members of the armed forces become familiar with their commercial labels. When the emergency is past, soldiers and sailors will become, in most instances, the heads of families, and their acquaintanceship with established brands will have a decided effect upon buying practices. In the last war, a company in Newark, New Jersey, secured from the army a contract for two carloads a day of candy fruit drops called "Charms." With the Armistice, this contract was cancelled, and the firm was left without a single customer. But several million American soldiers had become familiar with the product and with its bright-colored wrapping; their demand when they returned to civilian life was sufficient to create almost overnight a market which permitted the firm to continue in business and even to enlarge its output. If Charms had not been delivered to the soldiers in a package which afterward could be used for commercial sale, cancellation of the army contract might well have been fatal at once.

Also, there is the likelihood that when the present war is over, the federal government will be caught with considerable stocks of canned foods on hand. If these bore a special army-and-navy label, they either would have to be sold at a material discount, or re-labeled. Either action would be costly, and would tend to depress the market considerably more than would the act of releasing that volume of merchandise into regular trade channels.

British Resume Standard Labeling

● There has been much comment in this country about the action of the British government in requiring that canners use ribbon strip labels on their products. It is not, however, generally known that the British have abandoned that practice.

Today Britain's canners use full-sized, multi-colored lithographed labels, the only requirement being that they be printed on paper made from waste material or straw. According to one source, the present labels can scarcely be distinguished from those made before the war.

Bureau of Standards Issues Simplified Practice Recommendations

● The National Bureau of Standards has recently issued simplified practice recommendations for Set-Up Paper Boxes (R126-41); Folding Paper Boxes (R127-41); and for Single-Faced Corrugated-Board Rolls (R1777-41).

These recommendations are the result of years of work by firms manufacturing the products in cooperation with the Bureau of Standards and have been widely accepted in the industries affected. In the field of folding boxes the recommendations cover 23 sizes, a reduction of 96.5 per cent from the 683 odd sizes reported by 186 retail stores surveyed and a decrease of 61 per cent from the 59 sizes formally listed. According to the survey data, 52 per cent of the total annual consumption of folding boxes was concentrated on only 9 of the 683 sizes.

The 75 sizes of set-up boxes listed in the new recommendations represent a reduction of 97 per cent from the 2,849 sizes reported by stores in the current survey, and decrease of 61 per cent from the 194 sizes formerly listed. Selection of sizes in the revised schedule was made in part because of observed current quantity use, and in part as a means of providing a sufficient range of sizes for all uses. Store practice as reflected in the survey, indicated that between 16 and 53 box sizes would adequately satisfy normal store requirements.

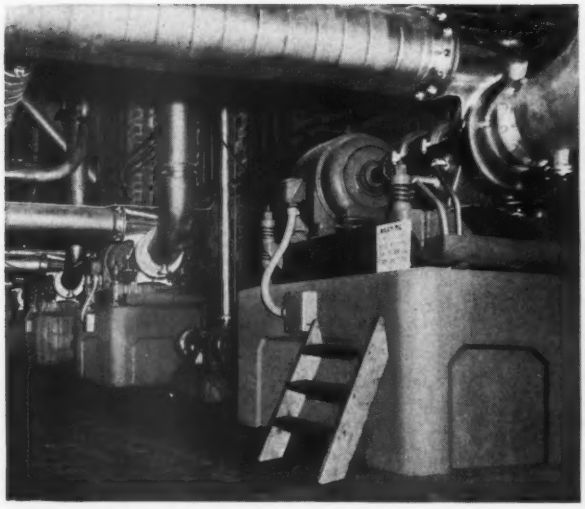
Copies of these recommendations may be obtained from the Superintendent of Documents, Washington, D. C., at 5 cents each.

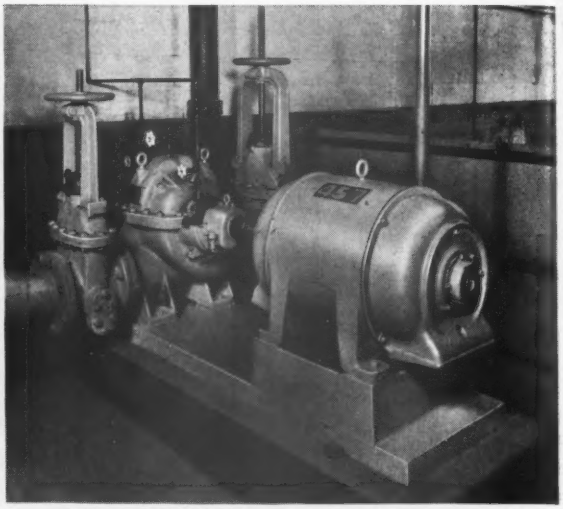
Paperboard Production Up But Backlog Still Rises

● Production of paperboard in the United States in May amounted to 526,286 tons, against 499,930 in April and 470,244 in May, 1940, according to the Department of Commerce. Output in the first five months was 2,385,372 tons, against 2,125,597 in the like period of last year, the department reports.

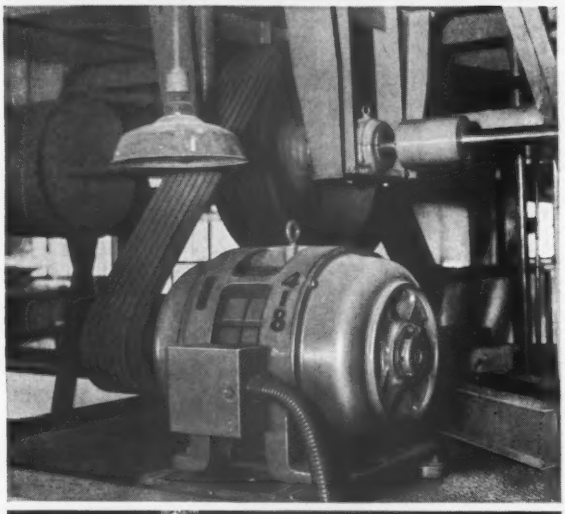
New orders received during the month amounted to 572,522 tons, resulting in a rise of unfilled orders to 370,151 tons at the end of May. This was the fifth consecutive rise in unfilled orders and put them far above any previous figure. The rush of buying in September, 1939, put unfilled orders up 290,467 tons at the end of that month while the high point reached in the NRA buying spurt in 1933 was only 144,307 tons at end of June in that year.

May production this year was reported at 89.4% of capacity, while the five months' output was 84.1% of capacity.





A few of the hundreds of Fairbanks-Morse Motors in the Puget Sound Pulp & Timber Co. mill at Bellingham, Washington.

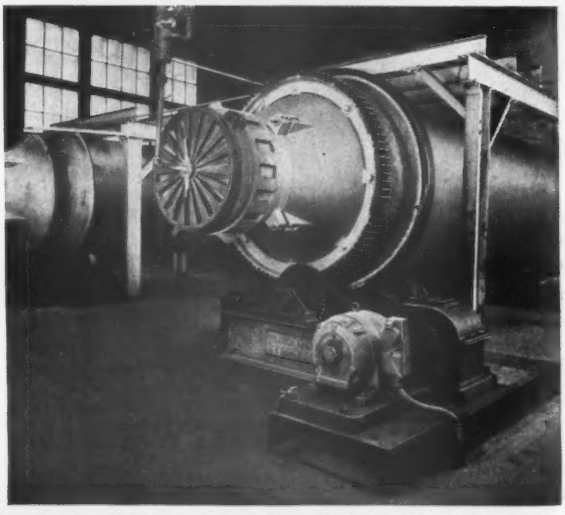


6000 hp. in F-M Motors Now Serve Puget Sound Pulp & Timber Co.

FOR a recently completed expansion program which makes its Bellingham, Washington, mill the world's largest producer of unbleached sulphite pulp, the Puget Sound Pulp & Timber Co. specified *Fairbanks-Morse Motors.*

This choice is especially significant because it was *based upon service records.* When an earlier expansion was completed in 1938, the mill employed 210 F-M Motors totaling about 3800 hp.—almost the total motor requirement of the mill. Highly satisfactory performance of those motors in all departments, under all pulp-mill conditions, led to the same make being ordered for the latest expansion. Now the mill's F-M Motors total more than 6000 hp.

In mills and factories everywhere you'll find similar cases where trial has led to standardization on F-M Motors. To get complete information on economical, dependable F-M Motors for your particular service, write Fairbanks, Morse & Co., Dept. G96, 600 S. Michigan Ave., Chicago, Ill. Branches and service stations throughout the United States and Canada.



FAIRBANKS·MORSE MOTORS

DIESEL ENGINES ELECTRICAL MACHINERY RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
PUMPS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

Coast Box Makers Meet at Lake Tahoe

THE Pacific Coast Paper Box Manufacturers Association held it twenty-seventh annual convention at Tahoe Tavern, Lake Tahoe, California, June 30th-July 2nd, with a record number in attendance.

One hundred and twenty-one members and their guests together with supply and equipment men took part in the various activities.

Representatives from two national associations attended the convention, A. E. Murphy, secretary of the Folding Paper Box Association of America, and William R. Kreeger, secretary of the National Paper Box Manufacturers' Association. The former gave a talk on the "National Association's Research Work Program," which was illustrated with moving pictures. Mr. Kreeger spoke on "Present Necessities in the Paper Box Business."

Other speakers were J. C. Meyerstein, attorney for the Pacific Coast Paper Box Manufacturers' Association; O. C. Majors, district sales manager, Fibreboard Products, Inc., Los Angeles; Carroll D. Hall, author and historian, who spoke on the Tahoe country under the title, "Men and Mountains"; and F. T. Letchfield, consulting engineer and vice president of the Wells-Fargo Bank & Union Trust Co., San Francisco; whose subject was "The Current Defense Outlook."

A moving picture titled "More Than Meets the Eye" was presented by David Elliott, International Printing Ink Corporation, San Francisco. The picture, in full color, dealt with the importance of chemical coatings in industry and was produced by the Interchemical Corp. of New York.

Hugh Peat Resigns

● Hugh Peat of San Francisco, secretary of the association for the past nineteen years, resigned at the convention. His resignation was received with regret. This was shown by the unanimous passing of the following resolution:

"Resolved that this association has received with deep regret the resignation of its secretary, Mr. Hugh Peat, and in accepting it acknowledges the most sincere appreciation of his many years of devoted and efficient service, and valuable effort in furtherance of the association's ideals."

Officers Elected

● At the Tahoe meeting new officers were elected. Cliff D. Allen, Western Paper Box Company, Oakland, was elected president to succeed Joe O'Reilly of the Standard Carton Company, Tacoma.

O. C. Majors, Fibreboard Products, Inc., Los Angeles, was chosen vice president succeeding Cliff D. Allen. Payson Thompson, Portland Paper Box Company, Portland, was elected treasurer succeeding O. C. Majors.

The new executive committee, folding box division, includes: H. H. Emme, Pacific Label & Carton Co., Seattle; Kramer Barnes, Oakland Folding Paper Box Co., Emeryville; Chas. Ruble, Standard Paper Box Corp., Los Angeles. The retiring members of this committee are: John Adlesich, Columbia Paper Products, Portland; Oscar Bergland, Union Paper Box Manufacturing Co., Seattle; O. C. Majors, Fibreboard Products, Inc., Los Angeles.

The new executive committee, setup box division, includes: W. D. Grigsby, Grigsby Brothers, Portland; Sam Platt, United Paper Box Company, San Francisco; Clarence B. Kerr, Hollywood Paper Box Division, The Flintkote Company. The retiring members of this committee are: F. L. Dielschneider, Oregon Paper Box Co., Portland; O. E. Clark, Clark Paper Box Co., Los Angeles; S. F. Higgins, Acme Paper Box Co., San Francisco.

Fred C. Kewell, Western Paper Box Company, Oakland, was elected a director of the Folding Paper Box Association of America, representing the Pacific Coast Association. Mr. Kewell and T. B. Seebaldt, Hersee Company, Los Angeles, were elected directors of the National Paper Box Manufacturer's Association representing the Pacific Coast.

In his addres of welcome President O'Reilly said in part, "As each of these annual events is added to a total, growing ever more impressive, one cannot help but feel the strength and wisdom of the guiding spirit which holds this group together and makes this lengthening chain possible.

"We all know Hugh Peat for the fine gentleman he is, but our close association with him may cause us to lack full appreciation of his outstanding ability and untiring zeal. Twenty-seven years of successful association management is a very creditable accomplishment. I feel that we owe Mr. Peat a great debt of gratitude for his guidance through the many and varied situations which have arisen during all these years.

"Secondly, of course, this accomplishment is due to the sportsmanship and spirit of fair play among the members, especially the old timers. During the formative stages of the early days, benefits of the association were not so evident as they are today and the spending of time and money on these activities required unfaltering faith in the future. A well-earned tribute, then, to the old timers who carried on to success. . . .

"As a group we are extremely fortunate—each of us enjoys advantages and privileges that many people on the face of this earth would struggle for generations to attain. I think it is very fitting that we, as a group, but each in our own individual way, take one moment to thank God for these gifts, and ask His continued blessing. Also, we should give a kind thought to those who have sat with us in years past and will return no more."

Richard Schmidt Wins Golf Cup

● Richard Schmidt of the Schmidt Lithograph Company, San Francisco, won the association's silver challenge cup in medal play of 54 holes with the low net score. Twenty-three took part in the tournament which was divided into three flights. Will Evans won the first flight; T. B. Seebaldt the second and Richard Schmidt the third.

The winners and runners-up for the 54 holes were:

First Flight—	Gross	H'cap.	Net
Will Evans	241	42	199
V. L. Yerby	249	42	207
Second Flight—			
T. B. Seebaldt	257	51	206
Murray Brown	255	48	207
Third Flight—			
Richard Schmidt	260	72	188
Payson Thompson	285	90	195

Mr. Schmidt also won the tournament in 1936.

Ladies Entertainment

● In charge of the ladies entertainment was Mrs. A. E. Carlson of Los Angeles as chairman, Mrs. Richard Schmidt of San Francisco; Mrs. O.

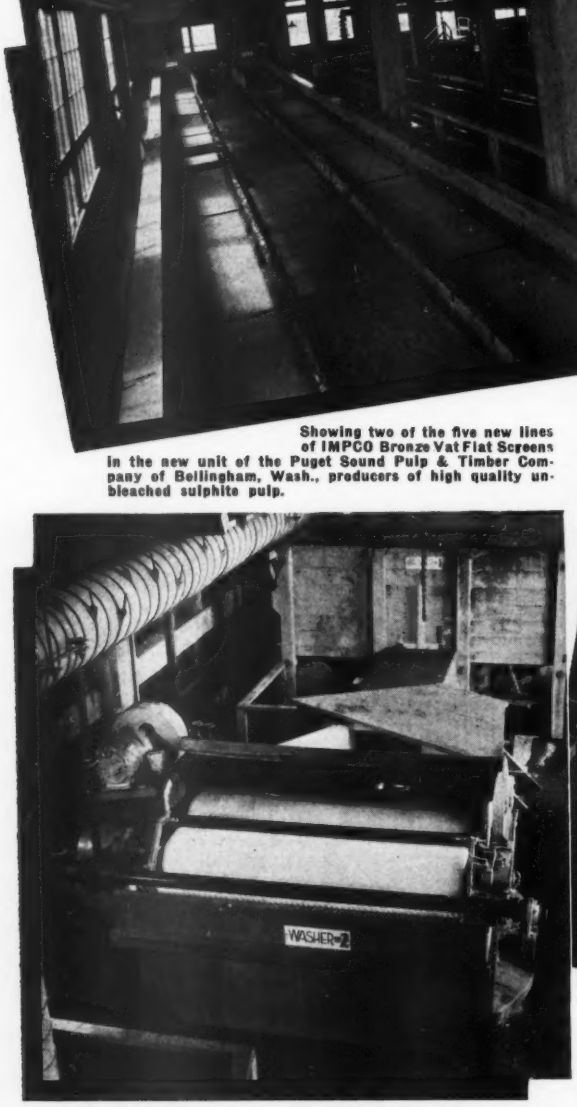
IMPCO

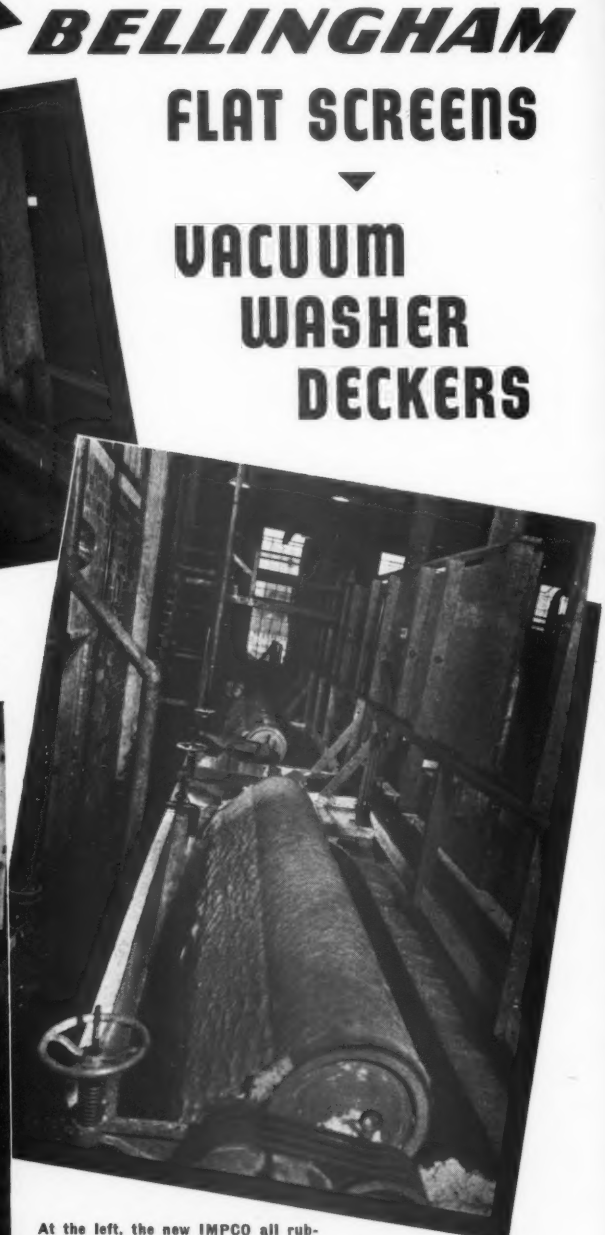
Re Orders for BELLINGHAM

FLAT SCREENS

VACUUM WASHER DECKERS

Showing two of the five new lines of IMPCO Bronze Vat Flat Screens in the new unit of the Puget Sound Pulp & Timber Company of Bellingham, Wash., producers of high quality unbleached sulphite pulp.





At the left, the new IMPCO all rubber lined 5 x 7-ft. Vacuum Washer.
and, above, the four IMPCO Bronze Mould, Wood Vat Deckers, the two new double-end type appearing in the foreground.

IMPROVED PAPER MACHINERY CORPORATION

NASHUA • NEW HAMPSHIRE

C. Majors of Los Angeles; Mrs. Joe O'Reilly of Tacoma; and Mrs. A. L. Schooley. On June 30th Mrs. R. O. Comstock served as hostess and was assisted by Mrs. Fred G. Kewell and Mrs. S. C. Caldwell, while on July 1st Mrs. Richard Schmidt was hostess and she was assisted by Mrs. Wm. J. O'Donnell, Mrs. Oscar Bergland and Mrs. Hugh Peat.

The ladies putting contest always creates much interest at the conventions. Mrs. Douglas Barthelmess won this year with a score of 21, Mrs. H. H. Worth was second with a score of 22, Mrs. Sumner Caldwell, third with a score of 22, and Mrs. Charles Minsky won the booby prize with a score of 58.

In the bridge tournament prizes were won by Mrs. H. H. Zellerbach, Mrs. Cliff D. Allen and Mrs. Howard Campbell.

● The following men attended the twenty-seventh annual convention of the Pacific Coast Paper Box Manufacturers Association:

LOS ANGELES — Acme Paper Box Company, Chas. Minsky; Clark Paper Box Co., O. E. Clark; Eureka Paper Box Co., F. M. O'Leary; Fibreboard Products, Inc., Bruce Brown, Murray Brown, O. C. Majors; Hersee Co., T. B. Seebaldt; Los Angeles Paper Box Factory, W. H. Kewell; Pioneer-Flintkote Co., A. E. Carlson, C. B. Kerr, Dan Peterson; Standard Paper Box Corp., Chas. Ruble.

NAPA—Napa Paper Box Co., S. H. Woods, Mr. Stadler.

OAKLAND—Western Paper Box Co., F. W. Kewell, Fred C. Kewell, C. D. Allen; Paper Box Corp., J. V. Manners.

EMERYVILLE—Oakland Folding Paper Box Co., Kramer Barnes, J. A. Sweet.

LONGVIEW, Washington—Pacific Paperboard Co., L. E. Utter, T. J. Kennedy.

PORTLAND—Portland Paper Box Co., Payson Thompson.

SAN FRANCISCO—Fibreboard Products, Inc., W. H. Thomas, H. A. Campbell; Fleischhacker Paper Box Co., G. A. Trost, W. J. Field; Schmidt Lithograph Co., Richard Schmidt, H. J. Cardoza; Chas J. Schmitt Co., Chas. J. Schmitt, R. O. Comstock.

SEATTLE — Union Paper Box Mfg. Co., Oscar Bergland.

TACOMA—Standard Carton Co., Joe O'Reilly.

Non-members—Oregon Paper Box Co., F. L. Dielschneider.

Supply Houses — Associated Ink Co., H. H. Behrens; Harry W. Brintnall Co., Harry W. Brintnall, W. B. Reich; California Ink Co., Cliff Mattos; California Container Corp., Will Evans; International Printing Ink Corp., David Elliott; National Starch Products Co., Douglas F. Barthelmess, Aaron A. Rose, Marks Waxman; Merrill Ink Co., V. L. Yerby; Royal Container Co., Harold R. Freemon; Schulken & Murphy, Walter Schulken; Zellerbach Paper Company, S. C. Caldwell, Philo K. Holland, C. H. Johnson.

Secretaries—H. H. Worth; Hugh Peat, general secretary, Pacific Coast Paper Box Manufacturers' Association; William R. Kreeger, National Paper Box Manufacturers' Association; A. E. Murphy, Folding Paper Box Association of America; J. C. Meyerstein, attorney for the Pacific Coast Paper Box Manufacturers' Association.

Canada Supplying All New Zealand Newsprint

● Canada supplies the entire New Zealand demand for newsprint and will continue to do so for at least another four years.

Last year New Zealand imported Canadian newsprint valued at $1,452,639 compared with $1,250,298 in 1939. The 1940 increase was due to advance purchases for stock against a possible wartime shortage.

Actually less newsprint is being consumed in New Zealand than last year, as the New Zealand government has requested publishers to cut down the size of their publications.

Newsprint Production Lower Than June, 1940

● Production in Canada during June, 1941, amounted to 273,697 tons and shipments to 281,843 tons. Production in the United States was 83,962 tons and shipments 85,424 tons, making a total United States and Canadian newsprint production of 357,659 tons and shipments of 367,267 tons. During June, 29,603 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 387,262 tons. Total production in June, 1940, was 430,367 tons.

The Canadian mills produced 20,853 tons less in the first six months of 1941 than in the first six months of 1940, which was a decrease of one and three-tenths per cent. The output in the United States was 6,125 tons or one and two-tenths per cent more than in the first six months of 1940; in Newfoundland production was 4,211 tons or two and five-tenths per cent more, making a net decrease of 10,517 tons, or five-tenths of one per cent less than in the first six months of 1940.

Stocks of newsprint paper at the end of June were 165,898 tons at Canadian mills and 12,065 tons at United States mills, making a combined total of 177,963 tons compared with 187,571 tons on May 31, 1941, and 198,112 tons at the end of June, 1940.

Discuss Newsprint Price Situation

● Despite rising costs of production and higher taxes, Canadian newsprint mills will probably continue the $50 a ton basic price for the balance of the year.

International Paper Company has announced through its president, R. J. Cullen, that no change will be made in the third quarter.

Should the $50 level f.o.b. New York remain in effect for the final quarter, the Canadian industry's customers will have enjoyed four full years of price stability —one of the consummations that has been urged for many years by individual producers and by the Newsprint Association of Canada.

Financial Counsel, Montreal, in analyzing the situation, states that there are offsetting arguments for an advance to take care of advancing costs" and it cites several conflicting elements. A very real one, this service points out, is the fact that U. S. mills for 3½ years, generally, have delivered newsprint at a price below the Canadian price applicable to most mills. In 1938, the price advanced $7.50 a ton to $50. Most U. S. mills hold to $48. This was raised to $49 in 1939, and held there in 1940 and 1941—still $1 under the Canadian price. At least one mill in the U. S. has announced maintenance of this price for the entire second half of 1941, and the indications appear to be that this example will be followed by other U. S. mills. At the most, a $50 price might be anticipated, but no more.

"The Canadian mills, moreover, have enjoyed, ever since the outbreak of war, the 10 per cent premium existing on a large percentage of exports paid for in U. S. funds. These include not only shipments to the United States, but to all territory outside the sterling area. This represents, net, about $4.50 extra per ton for such markets. Canada's shipments to the U. S. alone amounted to 2,594,452 tons in 1940 (out of total sales of 3,435,934 tons), and something over $10,000,000 was the premium on these sales. Any present increase in price by Canadian mills, in the face of this advantage, might be expected to arouse antagonism among U. S. customers. This might not be injurious just at the moment, but would be certain to stimulate purchases from Scandinavian mills when normal conditions of international trade return—and in 1939 well over 300,000 tons of newsprint reached the U. S. from Europe, against not a single ton in April, 1941.

"All in all, a $50 price maintained for the final quarter of 1941 seems highly probable; an advance, extremely improbable."

British Columbia Log Consumption

● British Columbia pulp mills during the past four years have disposed of about 258,000,000 board feet of timber out of an average total cut of 3,236,000,000 feet, according to provincial government statistics issued this month.

Raw log export during the four years reviewed averaged more than the total used by the pulp mills—264,000,000 feet. Sawmills utilized about 2,31,000,000 feet; shingle mills about 250,000,000 feet, while 158,000,000 feet went for ties, poles and other minor products of the industry.

Development of Stream-Flow Vat System

by PHILIP H. GOLDSMITH*

PRIOR to the development of the Stream-Flow Vat System, cylinder machines had not kept up with the times. Paper makers have known their problem. They have known the need of different vat circles for different speeds, stocks and products. They have known that a smooth approach flow is the essential first step for good formation. They have also known that thorough mixing and air removal as well as steady feed are necessary. But, strangely enough, no machine on the market combined these essential features.

The Pusey and Jones Corporation saw the need for a complete redesign of the cylinder machine to meet modern standards. As leaders in building wide and fast fourdriniers this concern recognized the backward state of cylinder machine design. Its leading position in the industry and its unexcelled shops and engineering facilties made it the organization best fitted to undertake this task.

The interest and cooperatiton offered by the paper industry was immediate and enthusiastic. Paper is made by paper machines—not by blue prints. For a new type of machine to actually benefit the industry it must be bought and operated. Major developments therefore depend upon operators and executives who are familiar with the shortcomings of old equipment and recognize the changes necessary to obtain more profitable operation.

The First Stream-Flow Vats

● Mr. Robert Nivison, manager of mills of the Hollingsworth & Whitney Co., has had a life-long and intimate contact with cylinder as well as fourdrinier operations. He saw in the stream-flow vat the answer to many of his cylinder machine problems. The first stream-flow installation anywhere started operation in January, 1940, at the Waterville mill of the above company. It consists of four stream-flow vats 48-inch diameter by 134-inch face and four up-flow head boxes.

The stream-flow vat has an outer vat circle which serves as a final approach pass before the making board. The inner vat circle is independently adjustable at front, bottom and back. This is the first practical vat which permits establishing the ideal relation between stock flow and mold speed. The whole construction is very rugged and simple.

The up-flow head box consists of an inner cone in which the flow rises and an outer cone, the bottom of which connects to the underfeed pipe. It is the simplest form of a two-pass head box with a maximum dam length and surface area. It is introduced between the pump and the vat to permit air to escape and to absorb any irregularities in flow.

The Waterville installation took the place of the fourdrinier part on an existing machine. The previous cylinder machine at the Gardiner mill of the company was dismantled. As is often the case with new developments, definite limits were naturally placed on cost for this initial installation. Pumps and piping were furnished by the mill. Inlet hoppers were selected instead of flow spreaders. This is, however, a very noteworthy installation since it was the first of its kind and far in advance of anything which had previously existed.

It is of interest that most of the operators were fourdrinier men without previous cylinder machine experience. Nevertheless the machine was started up in a remarkably smooth manner. The very first sheet to come over showed the uniform and even look-thru which is typical of stream-flow formation. Operating speeds at the start were about double those previously attained with the old cylinder machine at the Gardiner mill even though the Gardiner speeds were comparable with other operations making equally high grade products. Orders from 76 lbs. to over 300 pounds (24x36—480) were run on the four vats. The sheet was level, the tests were up. At double the speed it was found possible to cross the fibres to a much greater extent than formerly. The proof of the pudding is in the eating —and the pudding tasted good. Another stream-flow wet end was ordered by the same concern for their new mill at Mobile, Alabama.

First Stream-Flow System on .009″

● The Mead Corporation decided that a stream-flow system could improve the formation of .009″ Chestnut which is an unusually difficult stock to handle. A stream-flow system was consequently ordered for their Harriman, Tennessee, mill. This unit has a stream-flow vat with a mold 60-inch diameter by 150-inch face. The system also includes an up-flow head box, a flow spreader and a flow mixer. The development of the new adjustable-flow pump was not yet complete, so an old centrifugal pump was used. The piping was also furnished by the mill.

The flow spreader has a gradually spreading flow passage with no obstructions. It is basically a properly designed hydraulic nozzle which receives the thoroughly mixed stock from the single underfeed pipe with a circular cross-section and delivers it to the vat inlet with the same consistency and flow velocity at every point across the full width of the machine.

The flow mixer resembles a Venturi in appearance but is used for intimate mixing of the various parts of the flow in the constricted throat where no air can be entrained.

The vat part in use previously was already an improvement over the old type counterflow vat. It did not, however, permit acceptable formation over 320 F.P.M. The stock had to be very slow, large amounts of fresh water makeup were necessary and an excessive amount of fines was spilled to the sewer. The average weight variation across the machine was 4 lbs. for 26 lbs./M sq.ft. basis weight.

The stream-flow system started operation in September, 1940. The formation bottleneck was gone. A superior sheet now runs at 400 F.P.M. With improvements in drying and stock capacity further increases are in prospect. The stock is now much freer which makes a better sheet, permits the drying of more paper, reduces stock preparation power, etc. Less make-up water is used, sewer losses are less. The sheet is automatically level within close limits. The operators quickly turned the advantages of the machine into profits for their company.

Ninepoint, whether from chestnut, straw or other stock, requires high tonnage operation and many mills in this line of business are limited in quality and production by formation. The Harriman installation illustrates what the stream-flow vat system can accomplish for such operations.

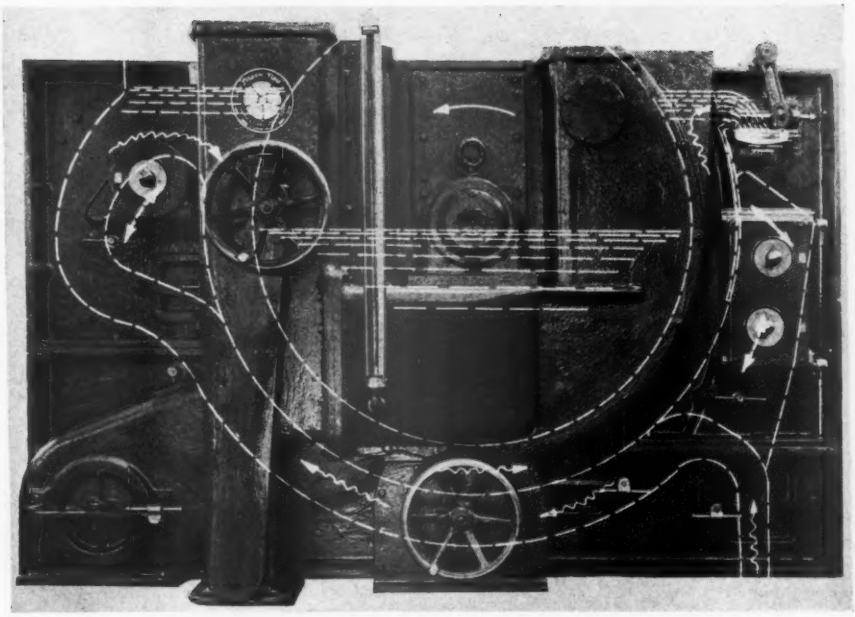
*Sales and Development Engineer, The Pusey & Jones Corporation, Wilmington, Delaware. Presented before the Board Group at the Annual Meeting of the American Pulp & Paper Mill Superintendents Association, Poland Springs, Maine, June 18, 1941.

A Repeat Order

● The first repeat order for newly developed equipment is always especially gratifying. The Hollingsworth & Whitney Co., who had reaped the benefits which are due to successful pioneers with their Waterville machine, had acquired a used cylinder machine for their new Mobile mill. They knew that the old style vats with which the machine was equipped were now antiquated. For quality and variety of products the cylinder part is the controlling factor and must be the best obtainable.

More latitude was allowed this time than for the Waterville job and in fact some improvements were worked out in collaboration with Messrs. Robert and William Nivison. The old, cheaper construction of a single casting for the vat ends was discarded in favor of sectional construction which permits the vat ends to be made more suitable for their several functions. The simple rack and pinion arrangement for the circle adjustments is completely enclosed. The circulating dam is adjustable from one side of the machine like the vat circle adjustments, making all adjustments quick and fool-proof. At the suggestion of Mr. Hardy S. Ferguson, consulting engineer, the top of the outer cones of the up-flows was made vertical thereby saving space. A much improved all-metal couch slice was developed with the help of Mr. William Nivison. On the basis of tests made at Waterville the inlet hoppers were specified much longer than in the former case with a more gradual angle of spread than the Waterville hoppers but not as gradual an angle as standard flow spreaders. The pumps and piping were again furnished by the mill. The layout arrived at by the mill is an unusual one, the screens being located in the basement. This wet end consists of four stream-flow vats 48-inch diameter by 124-inch face with four up-flow head boxes.

Operation started on kraft pulp in November, 1940, the third installation to start up in the year. The formation of very free stock and heavy loads was again as excellent as on other products. Pulp operations generally can use a wet end which produces such a uniform sheet of very free stock at high production rates. This stream-flow wet end is in a strategic location and has the necessary flexiblity to form a superior sheet of any products which the market may require. In fact excellent sample orders have already been made of manilas, tags, white tags, indexes, bristols and folder stocks.

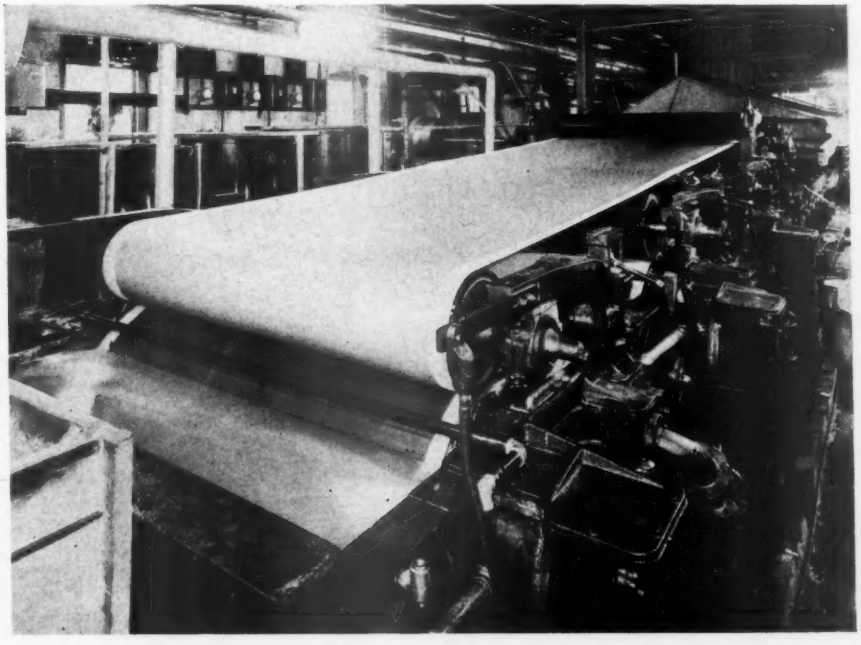


Stream Flow Vat. 60-inch diameter mold.

Another Difficult Formation Job

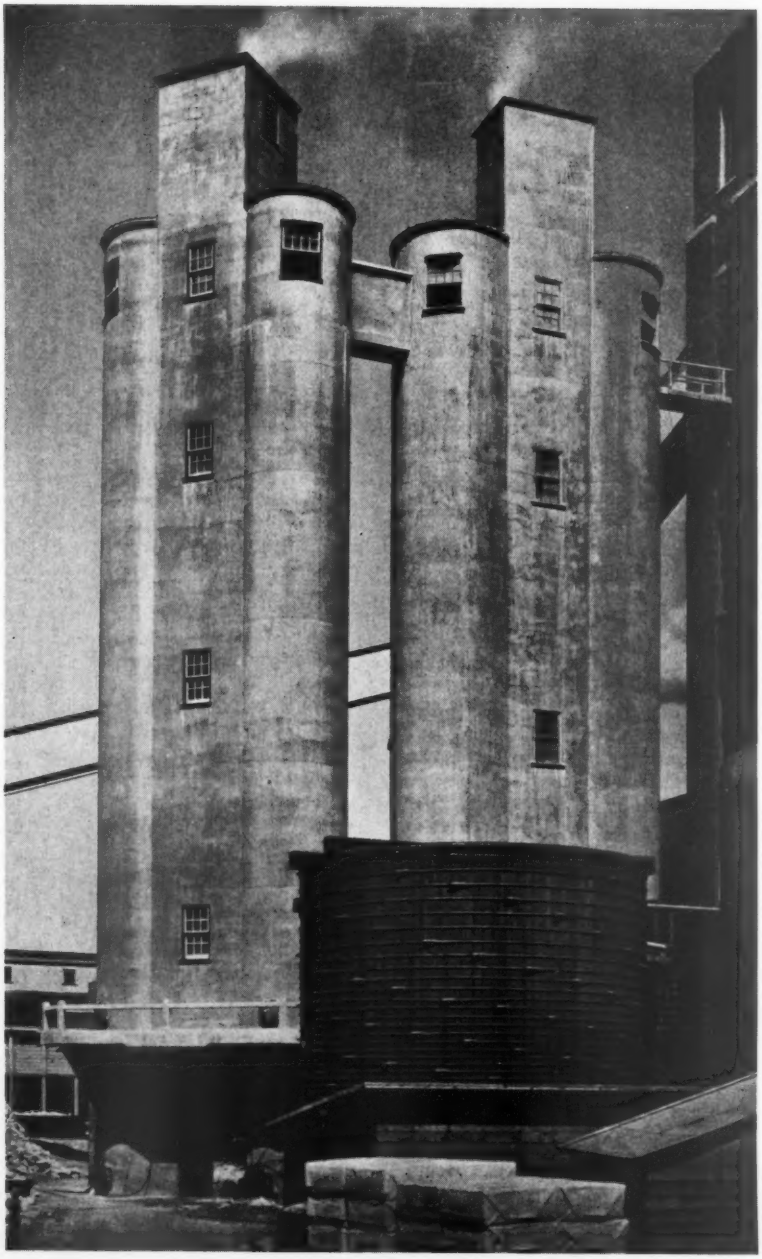
● We have looked for the toughest formation jobs in the belief that they are the best proof of the profits which can be earned under average conditions. The first installations cover among them a very wide range of products.

The Union Mills Paper Manufacturing Co. makes a large variety of very high grade kraft and rope sheets for special purposes and have a long established reputation for quality in their field. Mr. Ralph G. Simonton, an operating executive with thorough experience in the game, knew where and why his machines were limited. The stream-flow vat system was what he had been looking for. He and Mr. F. R. White, president, saw the profit possibilities and the construction of another stream-flow wet end got under way.



Formation in the Stream Flow Vat

Another JENSSEN ACID SYSTEM



A second JENSSEN ACID SYSTEM was recently installed by the PUGET SOUND PULP & TIMBER COMPANY at its mill in Bellingham, Washington.

This second system, together with the 1938 installation, provides acid for the expansion of production this year from 270 tons to 470 tons per day, making the Bellingham mill the largest producer of unbleached sulphite pulp in the world.

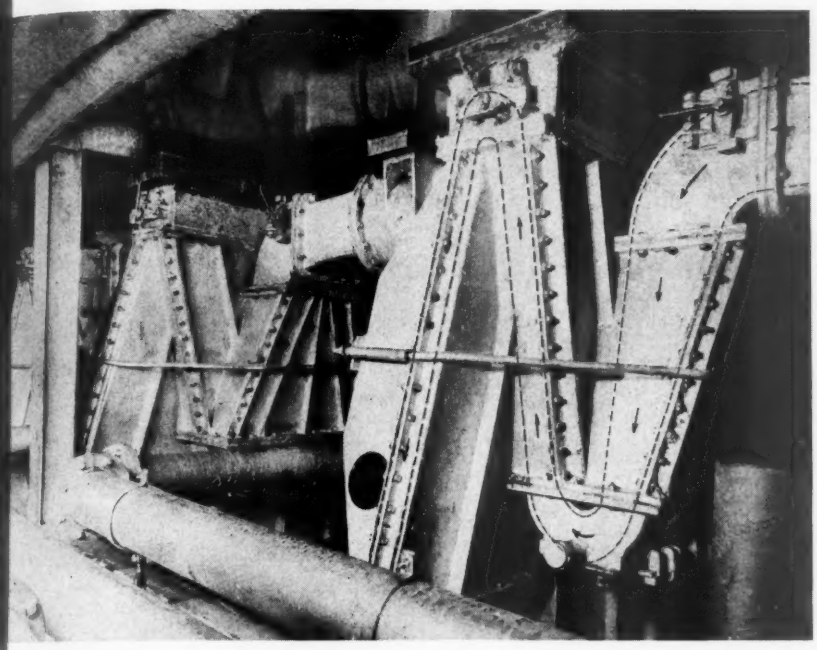
Since 1926 all new sulphite pulp mills constructed in the United States and Canada have been equipped with JENSSEN ACID SYSTEMS, and all but one since 1916.

JENSSEN IS THE STANDARD ACID MAKING SYSTEM

G. D. JENSSEN COMPANY

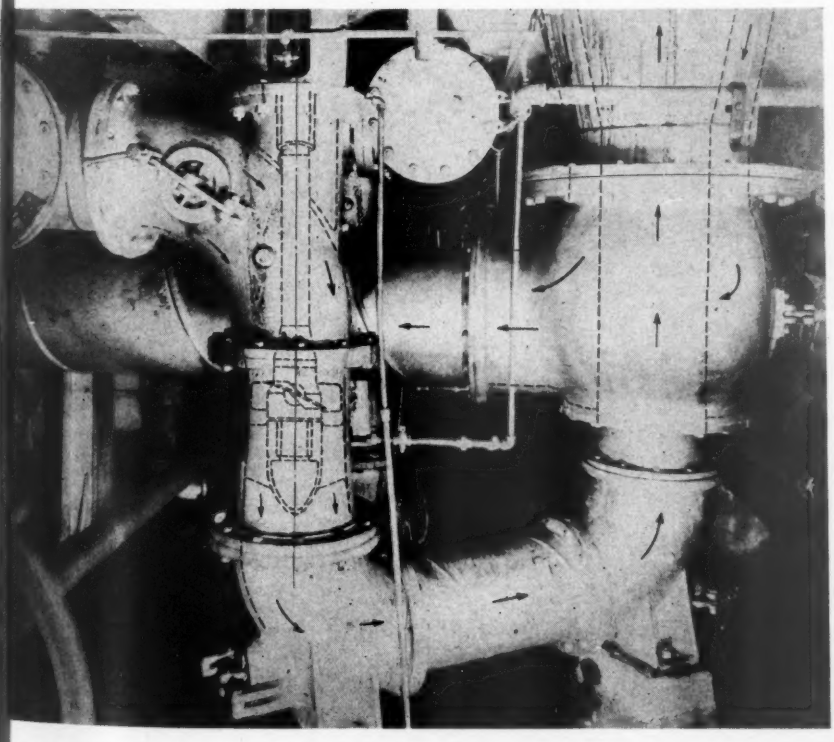
103 PARK AVENUE, NEW YORK

A. H. LUNDBERG, 3311 FIRST AVENUE SOUTH, SEATTLE



The Flow Spreader (one for each vat)

It consists of three stream-flow vat systems with molds 48-inch diameter by 90-inch face, up-flows and flow spreaders. The stream-flow vats are equipped with telescopic spill gates which permit the level inside the mold to be lowered to any point desired without deep spill chambers. The customer specified complete corrosion proofing and after a thorough investigation rubber lining was chosen which maintains smooth flow surfaces and makes washup easy. Mr. Simonton also selected the new adjustable-flow vat pumps in preference to centrifugal pumps with valve control. The capacity of the adjustable-flow pump is varied by changing the pitch of the impeller vanes on the same principle as the feathering airplane propeller and the Kaplan water turbine which have been in use for years. The flow obstruction of the valve is eliminated and power is materially reduced. The pump is vertical and occupies no more space than does the pipe. The motor is above the pump and therefore better protected. The adjusting wheel is on the operating floor. All of these improvements became standard on all subsequent jobs.



Adjustable Flow Pump

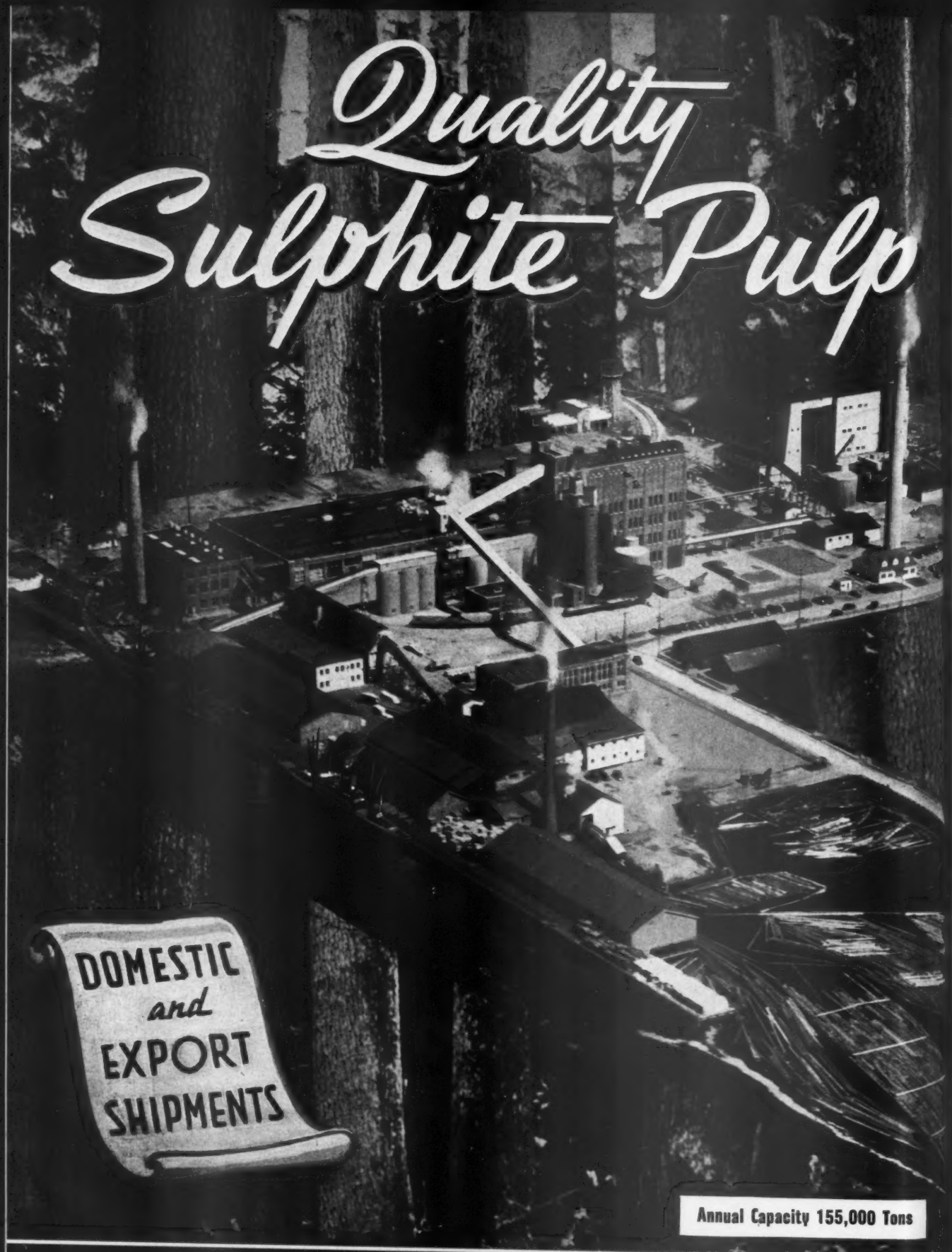
The vats replaced were equal to any obtainable before the day of the stream-flow system. However they limited the machine far below the old driving and drying capacity. Since the stream-flow wet end started operation in February, 1941, all grades have been running at top driving and drying speeds. This represents production increases up to 33 per cent for the most difficult grades. The driving speed is now being doubled and 50 per cent more dryers are under construction—and this in a mill where speed was always guarded against to preserve quality. The formation at higher speeds is far superior to the old formatiton at lower speeds. Once again the formation bottleneck was broken wide open.

This installation may be said to have ended the development period. All orders since have been for standard complete units. Actual operating results had been conclusive enough to satisfy even the most cautious or skeptical.

First Stream-Flow System on Roofing

● Although not one of the largest branches of the industry the formation of felt is of exceptional interest both technically and profit-wise. High tonnage of extremely coarse stock must be formed over a very wide range of sheet weights and machine speeds. The necessities and opportunities for furnish savings are peremptory. Uniform weights are important. Large profit opportunities are available to the mill which can form superior felt at higher speeds with cheaper furnish.

The first stream-flow system for roofing is at this time of writing under process of erection at the New Orleans mill of the Flintkote Company. It consists of a stream-flow vat with a mold 60-inch diameter by 92-inch face, a flow spreader, an up-flow head box, a flow mixer, an adjustable-flow pump and all the main piping. The whole system is



PUGET SOUND PULP & TIMBER CO

Bellingham Washington

rubber lined to prevent pitting and preserve smooth flow surfaces.

This installation will show the way for better formation at lower cost in the felt industry as all other stream-flow installations have done in their respective fields.

Another Endorsement

● An interesting sidelight on the industry's response to this effort has been the character of the concerns who have been the first to endorse the development. Without exception they are conservative organizations who do not try doubtful things.

The Crocker Burbank and Co. Assn. have indicated their approval by ordering a stream-flow wet end consisting of four systems with molds 48-inch diameter by 104-inch face. This concern, carrying one of the oldest paper making names in this country, would not have ordered this equipment if their own research and experience had not proven to them the soundness of the design.

Before many weeks the operation of this wet end will again demonstrate by its results that high grade boards and heavy papers can no longer be made competitively except with modern equipment.

Stream-Flow Systems on Boxboard

● Boxboard operations require a combination of quality, large production and great flexibility. It is one of the most important branches of the paper industry both as regards tonnage and value of product. A large number of different grades are made requiring a very wide range of sheet weights, machine speeds and stocks. This branch of the industry should therefore benefit as much if not more than any other group from higher quality, greater flexibility and lower operating cost of stream-flow formation In addition to better quality and much higher speeds other important benefits result where several different stocks are used such as reduction in liner pointages, furnish, substitutions, etc.

One boxboard mill has under construction three stream-flow vat systems with molds 48-inch diameter by 106-inch face, for use in the top liner, under liner and back liner positions. Four of the old vats with smaller molds will be retained as filler vats to be replaced at a future date by stream-flow vat systems. This contract included stream-flow vats, up-flows, flow spreaders, adjustable-flow pumps and all the main piping. The flow surfaces are rubber lined. In short the equipment comprises three complete stream-flow vat systems of our standard construction.

Doing the job in several steps will often fit the budget better and is therefore well worth considering in many cases. The greatest overall economy and the quickest return on the investment can, however, usually be obtained by replacing all the old vats at one time. Another contract is on the books covering the same number of units for another boxboard machine.

When these stream-flow vat systems begin operation their performance can be expected to cause a rapid development in many boxboard mills in the near future.

Burnetts Vacation In Central Oregon

● H. E. Burnett of the personnel department of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, vacationed in Central Oregon with Mrs. Burnett and their two children, from July 3rd to 14th.

Britain Exporting New Filter Papers

● New types of filtering paper are now being made in Great Britain from pure cotton rags to take the place of similar products formerly obtained from the Continent.

Large quantities of it are being shipped to Empire countries, Egypt, Palestine, China, the Dutch East Indies, the United States, Iceland and Portugal.

Much of this is new territory and the demand for the paper, which has increased by at least 50 per cent, comes from many industries, especially varnish manufacturers, oil refining, gold mining, the electrical trades, and by brewers, chemists and druggists.

Use Eastwood Wires Now

JOIN THE ARMY OF SATISFIED USERS

EASTWOOD FOURDRINIER WIRES EASTWOOD-NEALLEY CORP

EASTWOOD-NEALLEY CORPORATION

At Belleville, N. J. Since 1877

The Old Makes Way for the New

● Old ideas die hard. The cylinder machine has long been cheaply constructed. Cylinder products appeared to many executives like cheaper papers than fourdrinier papers. A box with a cylinder mold in it was considered a vat and what it couldn't accomplish was considered beyond the realm of the cylinder machine.

Today this is changed. Efficient equipment is available and present-day mills must either progress or die a lingering death. It is now appreciated that each vat system is an individual forming machine and must be designed with the same thought and care as a fourdrinier part. Through the successful collaboration of many persons the bottleneck is broken and the stream-flow vat system is the new standard by which the performance of cylilnder vat parts must be judged.

Italian Paper Production Curtailed

● A report received in this country July 15th states that paper, paperboard and pulp mills in Italy have been ordered to suspend operations for one week out of each month as well as on Sundays, to conserve raw materials.

The Associated Press also reported that the production of many fine papers has been forbidden and the size of daily newspapers and periodicals is to be controlled.

Business NOT as Usual

Keep your temper, gentle sir,
Writes the manufacturer,
Though your goods are overdue,
For a month or maybe two,
We cant' help it, please don't swear,
Labor's scarce and metals rare.

Can't get steel, can't get dies,
These are facts, we tell no lies,
Harry's drafted, so is Bill,
All our work is now uphill,
So, your order, we're afraid
May be still at bit delayed.

Still, you'll get it, don't be vexed,
Maybe this month, maybe next,
Keep on hoping, don't say "die,"
We'll fill your order bye and bye.

—Anonymous.

AN OLD AND VALUED CUSTOMER

Buys STEBBINS LININGS for Plant Addition

All Digesters, Acid Accumulators, Acid Towers, Acid Settling Tanks, Combustion Chambers, and Sulphur Burners in both Mill A and Mill B of the PUGET SOUND PULP & TIMBER COMPANY at Bellingham, are equipped with STEBBINS Corrosion Resistant Linings.

STEBBINS ENGINEERING CORPORATION

TEXTILE TOWER SEMCO SEATTLE, WASH.

Japan's Paper Industry Running Steadily

● Wartime conditions in Japan have affected the paper industry to only a moderate degree, according to the local press, says the U. S. Department of Commerce. The industry is represented as being almost self-sufficient with respect to supplies of wood pulp.

Production of machine made paper by companies affiliated with the Japan Paper Manufacturers Association showed an increase of 2.2 per cent during the first quarter of 1941, compared with a year ago. Sales by these companies during the 1941 quarter aggregated 239,954 short tons, an increase of 3.8 per cent over the first quarter of 1940.

The Japan Export Printing Paper Manufacturing Company was recently organized by Japanese manufacturers. This unit aims to control the manufacture of all printing paper for export. A head office is maitained in Kobe, a branch at Osaka, and agencies in several other cities.

B. C. Mills Consider Training Program

● Executives of British Columbia pulp and paper mills are considering the adoption of a plan to provide training for young men to relieve the current shortage of skilled machinists and speed production of war supplies.

The plan has already been initiated in eastern Canada under direction of a special committee of the Canadian Pulp & Paper Association. The mills have already supplied a large number of skilled workers for war industries and the present educational program seeks to build up a growing reserve of trained men to fill the places of those who have been released or loaned for war work.

James O'Halloran, recently appointed by H. R. MacMillan, president of Canada's Wartime Merchant Shipping, Ltd., to take charge of the company's activities on the West Coast, is a former chief engineer of Anglo-Canadian Pulp & Paper Mills, Montreal. He is only one of several of the paper industry's technical men who have offered their services for special posts in wartime industry.

The educational plan for younger men, however, is the result of a coordinated effort on the part of the industry throughout Canada. The schools operating in conjunction with the mills provide a relatively short but balanced course of training in practical shop work and to date applications to take the courses have exceded the number of men that can be handled. The scheme calls for individual selection of men and individual training; the work of both student and mentor is given voluntarily.

The program has been welcomed by the men at the plants, with the result that hundreds of workers are now preparing to fill the gaps created by release of senior men for war industries.

Because time is so limited and in order that this training plan may be of maximum usefulness, the training period has been limited to not more than twelve months. Actually, since the training is on an individual basis many men make substantial progress in less than the twelve-month period. There is no doubt that men who satisfactorily complete any of the given courses will be able to accept responsible posts in their chosen trades.

The plan consists of two parts: Home study courses to provide theoretical training, and practical machine shop instruction conducted simultaneously with the home study to develop the required manual skill. The plan also offers an opportunity to provide the necessary theoretical trainnig more quickly and at an appreciably lower cost than could be arranged under any other conditions.

Britain Reduces News Consumption 71% Below 1939

● Replying to a question asked in the House of Commons, May 28th, Sir. A. Duncan, Minister of Supply, said the average weekly consumption of newsprint by Newspapers in Great Britain during the six months ending May 11, 1941, was 6,230 tons. The corresponding figure for the six months ended July 1, 1939, was 21,326 tons.

These figures covered about 1,500 newspapers. The total number of newspapers had remained practically unchanged since the war began, Sir A. Duncan stated.

Fred Pontin Teaching First Aird at Bremerton

● Fred Pontin, first aid instructor for Crown Zellerbach Corporation and Rayonier Incorporated, has been loaned by the companies to teach night first aid classes at the Bremerton Navy Yard, according to an announcement by Lieutenant-Commander O. D. Adams, U.S. N.R., who is in charge of educational work for Navy Yard employees.

Champion Superintendent Returns from Australia

● James R. Simpson, superintendent, Champion Paper & Fibre Company, Hamilton, Ohio, arrived in Southern California late in June by Pan-American Clipper from a three months' trip to Australia. Mr. Simpson went to Australia to install machine coating equipment.

Mr. Simpson reported that the eucalyptus wood made excellent grades of book paper.

Canada Supplying South Africa with Newsprint

● Although west coast mills have shared in only a small degree, Canadian newsprint mills increased their exports to the Union of South Africa to 599,240 hundredweight last year, compared with 533,537 hundredweight in 1939.

Value of shipments rose from £267,905 to £355,858. In 1938 South Africa took 413,618 hundredweight of Canadian newsprint valued at £206,768.

Canadian exports to South Africa have risen on account of the elimination of the United Kingdom, Sweden and Finland as competitors in that market.

Newfoundland has become active in the South African newsprint field and is shipping nearly 200,000 hundredweight annually. Last year Canadian mills supplied 72 per cent of South Africa's newsprint imports and Newfoundland 22 per cent.

Dilts Announce Small Hydrapulper

●Specially designed for applications where a small capacity is needed, Dilts Machine Works, Fulton, N. Y., announce a new Hydrapulper with a 10-ton/24 hr. output.

This small Hydrapulper is identical in every respect except size with the giant production units now being built for the nation's paper mills. For mills making molded paper products such as paper flower pots, plates, and the like it is ideal. For paper specialties it is ideal. For laboratory usage it is also ideal.

This 10-ton Hydrapulper has a 150-gallon capacity at operating depth. It is 4' in diameter, 10' in height. It has the same tremendous pulping appetite that enables many mills to feed entire pulp rolls or uncut bales of mixed papers, wires and all.

Full information including details from actual applications is available on request. Write Dilts Machine Works, Fulton, N. Y., Division of the Black-Clawson Co.

Imports of Newsprint Into Venezuela Decline

● Importation of duty-free newsprint into Venezuela declined from 4,320,710 kilograms in 1939 to 3,315,480 kilograms in 1940. During both years the greater part of the total came from Canada and the United States. In 1939 the United States supplied 2,369,720 kilograms of such paper, or almost 55 per cent of the total. In 1940, Canada supplied 1,645,992 kilograms, or almost 50 per cent of the total while the share of the United States declined to 1,429,249 kilograms, or approximately 43 per cent of the total.

New Edition of Walker's Investors' Manual Out

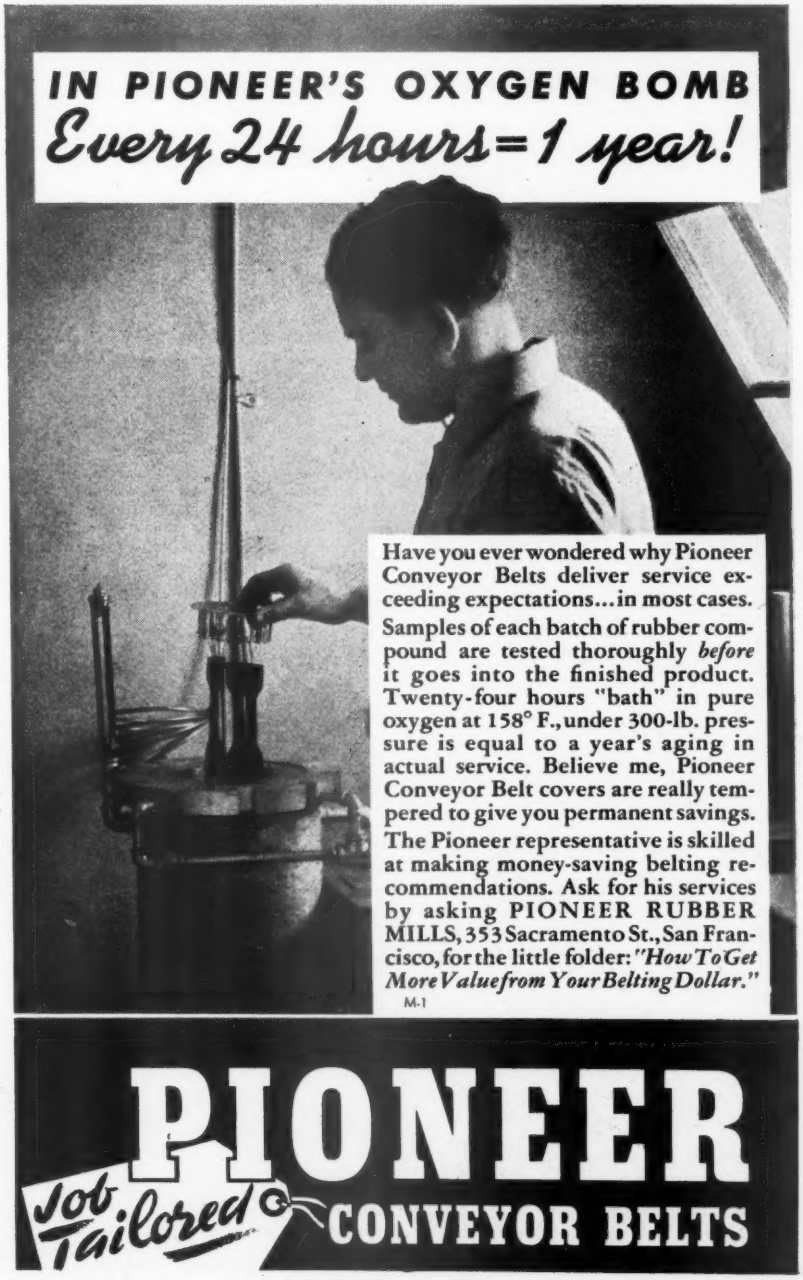
● The new 1941 Edition of Walker's Manual of Pacific Coast Securities, the "bible" of western investors, bankers and security dealers, is being published this month.

This year, for the first time, corporations whose securities have their principal markets in Portland and Seattle are listed in a special Pacific Northwest section. Many companies and issues not formerly described in Walker's are included in this section, wherein are listed approximately one hundred publicly financed Northwest organizations which have outstanding with the public 40 issues of common stock, 56 issues of preferred stock, and 59 bond note or debenture issues.

Data published on typical companies included comparative financial statements, names of officers and directors, details of security issues, hostory and type of business conducted, property owned, and other information of importance in appraising security values and prospects.

The current issue is the thirty-third consecutive annual volume, the original "Walker's" having made its first appearance in 1909.

The 1941 Walker's Manual contains 1152 pages; price is $13.50 post paid. Walker's Manual, Inc., 369 Pine St., San Francisco, are the publishers.


IN PIONEER'S OXYGEN BOMB
Every 24 hours = 1 year!
Have you ever wondered why Pioneer Conveyor Belts deliver service exceeding expectations... in most cases. Samples of each batch of rubber compound are tested thoroughly *before* it goes into the finished product. Twenty-four hours "bath" in pure oxygen at 158° F., under 300-lb. pressure is equal to a year's aging in actual service. Believe me, Pioneer Conveyor Belt covers are really tempered to give you permanent savings. The Pioneer representative is skilled at making money-saving belting recommendations. Ask for his services by asking PIONEER RUBBER MILLS, 353 Sacramento St., San Francisco, for the little folder: *"How To Get More Value from Your Belting Dollar."*
M-1
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Job Tailored
CONVEYOR BELTS

International Paper Absorbs Southern Kraft

● Richard J. Cullen, president of International Paper Co., has announced Southern Kraft Corp., formerly a wholly-owned subsidiary, has been merged into International Paper Co. as a sequel of the recent bond financing. International Paper Co.'s southern kraft division will continue the business of Southern Kraft Corp. without change in the latter's personnel.

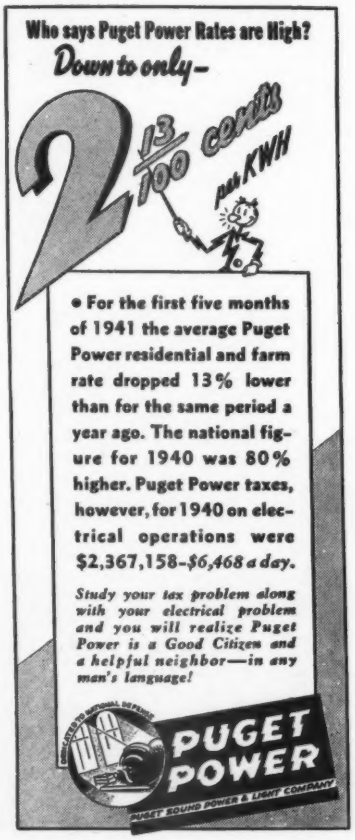
This merger marks another step in the simplification of the company's corporate structure. International now owns directly all of the major operating properties controlled by it in the United States.

This merger does not involve any exchanges of securities outstanding in the hands of the public. All stock of Southern Kraft Corp. was owned by International Paper. All of Southern Kraft Corp.'s outstanding first leasehold and general mortgage 4½% bonds have been called for redemption July 12 in connection with the recently announced sale by International Paper Co. of $26,500,000 of 3⅜% bonds.

The relatively small amounts of outstanding purchase money obligations of Southern Kraft Corp. will continue as obligations of International Paper Co.

Summers Announce Arrival of Baby Boy

● Mr. and Mrs. John Summers, recently transferred from Lebanon, Oregon, to the order department of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington became the parents of a son, John Cleland, on June 25th.


Who says Puget Power Rates are High?
Down to only—
2 13/100 cents per KWH
• For the first five months of 1941 the average Puget Power residential and farm rate dropped 13% lower than for the same period a year ago. The national figure for 1940 was 80% higher. Puget Power taxes, however, for 1940 on electrical operations were $2,367,158-$6,468 a day.
Study your tax problem along with your electrical problem and you will realize Puget Power is a Good Citizen and a helpful neighbor—in any man's language!
PUGET POWER
PUGET SOUND POWER & LIGHT COMPANY

Dictionary of Paper A Best Seller

● One year after its publication, The Dictionary of Paper has piled up an unusual record of distribution and service. Nearly all of the original three thousand bound copies have been sold, and continued interest in the book predicts that the remaining two thousand unbound copies will have to be assembled very soon to meet new subscriptions.

It will be recalled that the dictionary is the culmination of a three-year project initiated by the American Paper and Pulp Association. Working through its Committee on Classification and Definitions and The Institute of Paper Chemistry, the Association enjoyed the complete and sincere cooperation of the entire industry. As a result, the dictionary approaches a definitiveness and authority far beyond other efforts in this field.

An evidence of the appreciation of the value of this book may be found in its world-wide distribution. From this point of view, the book appeared at a most unfavorable time, because Europe was just becoming involved in the throes of the terrific struggle which put the question of definitions in the background. Nevertheless, orders were received from over twenty-five countries, an astonishing response for any type of publication. Among the countries having the dictionary within their borders are: Cuba, Mexico, Peru, Argentina, England, Eire, Scotland, India, Australia, South Africa, New Zealand, Tasmania, Finland, Norway, Sweden, France, Belgium, Holland, Switzerland, China, Japan, Russia, Hungary, Germany, and Italy.

The United States and its territories have accounted for approximately 2,400 of the copies delivered. All but four states (Montana, Nevada, New Mexico, and North Dakota) have the book, as do the District of Columbia, Hawaii, and the Philippines. The four states leading in sales are New York, Wisconsin, Ohio, and Illinois. Not only have copies been sold to pulp and paper manufacturers, converters, and consumers, but the purchases include United States Government departments and agencies, state and city purchasing departments, banks, insurance companies, traffic associations, and others. A substantial number of public and school libraries have the volume on their shelves.

Copies of the dictionary are still available from the American Paper and Pulp Association at $5.00 per volume, a figure which one observer has remarked as approximately $0.0015 per definition!

Brown Visits Coast C Z Mills

● Wayne Brown of Crown Zellerbach Corporation New York sales office, visited the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation mill at Camas, Washington, July 1st. Mr. Brown is taking a trip through the Pacific Northwest, visiting various mills.

Mrs. Jackson Now Nurse at Camas

● Mrs. Hattie Jackson, formerly of St. Joseph's hospital, Vancouver, Washington, is now the Crown Willamette plant nurse at Camas, Washington. Mrs. Etna B. Fuller, who formerly held this position, has retired and is now living in Rochester, New York.

New Glass Electrode pH Indicator

● Though simplified and stripped to essentials for low cost and easy operation, Leeds & Northrup's new glass-electrode pH indicator offers as much accuracy as is needed in many laboratory measurements and in practically all plant tests. It retains full accuracy up to 85° F. in atmospheres of 95 per cent relative humidity. Measurements can be made consistently within its limit of error of adjustment, ±0.1 pH.

Light in weight, well balanced, it includes everything necessary for measuring pH. Speed and convenience are inherent in its simple construction. Adjustments take but a moment. Measurements are made simply by pouring a sample into its self-contained beaker, and reading pH directly from the meter scale.

Adequately shielded, the instrument embodies a rugged deflection meter, and a thermionic amplifier of high stability. Manual temperature compensator (0 to 50° C., with 1-degree divisions) eliminates computations, saves time, prevents errors. Factory filled and sealed electrodes are highly stable. Strong, well-finished, mahogany case, of special construction, stands severe use and high humidity.

An 8-page illustrated catalog describing this new indicator is available, and has been sent to many sections of the L&N mailing list. If you failed to receive a copy, ask Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia, Pennsylvania, for Catalog E-96(2).

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CELLULOSE
PURIFICATION
EQUIPMENT

Congratulations
On Your New Plant

Bloedel-Donovan Lumber Mills
Columbia Valley Lumber Company

YARDS

Bellingham	Langley
Lynden	Oak Harbor
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BELLINGHAM IS PROUD
To have a growing industry like the Puget Sound Pulp & Timber Company

UNION PRINTING COMPANY
Operated for more than forty years in Bellingham, Wash.

Congratulations on the latest expansion of
Puget Sound Pulp and Timber Co.
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Students See Paper Made at Everett

● That visits to industrial plants by student bodies increase their eagerness to acquire knowledge is attested by an appreciative letter from a Seattle class' correspondent to Wm. J. Pilz, general manager of Everett Pulp & Paper Co., after a visit to the Everett Mills last month.

"We, the Eight-A class of the John Marshall Junior High School of Seattle, Washington, want to thank you sincerely for giving us the privilege of seeing with our own eyes how paper is made.

"We want you to know that we found your mill surprisingly clean. We were all fascinated by the speed and the way that your women workers counted the huge piles of paper.

"Most of us were entirely ignorant of the process wood and other materials go through in order to make paper. We now have you to thank for the excellent knowledge we have gained on the subject."

(signed) Harry Miles, for 8A Geog. class.

Credit Union Men Meet in Longview

● The Washington Filene League state credit union convention was held at Longview, Washington, June 6th and 7th, with more than 200 persons attending. This year's meeting was in response to an invitation, given at the convention last year by Collin Slane, for the meeting to be held in Longview.

Delegates visited the Weyerhaeuser Timber Company sawmill on Friday. Saturday visits included Longview Fibre Company and Longview Mill, Pulp Division Weyerhaeuser Timber Company.

Members of the program committee include Ralph Middendorp, chairman, Longview Fibre Company; Collin Slane, Longview Mill, Pulp Division Weyerhaeuser Timber Company, and W. C. Ohlfs of Weyerhaeuser Timber Company sawmill division.

Herb Wymore Has a Son

● A son was born to Mr. and Mrs. Herbert Wymore of Camas on July 1st. Mr. Wymore is a chemist in the Camas laboratory of Crown Willamette Paper Company Division of Crown Zellerbach Corporation.

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B. C. Produced 262,000 Tons Of Newsprint in 1940

● Production of newsprint in British Columbia in 1940 totalled 262,144 tons, compared with 216, 542 tons in the previous year.

The ten-year average production was 238,842 tons, according to British Columbia's forest service figures given out this month.

Paper other than newsprint was produced at the rate of 68,428 tons last year, compared with 50,870 tons in 1939 and a ten-year average of 37,843 tons.

Western Precipitation Announces New Dryer

● Featured in an attractive new 8-page bulletin is the new Turbulaire Dispersion Dryer manufactured by Western Precipitation Corporation of Los Angeles. Copies of this bulletin may be obtained by writing the company at 1016 West Ninth Street, Los Angeles.

Advantages of dispersion drying and application of the method are outlined in detail in the new bulletin. It is claimed that the turbulent dispersion in high temperature gases made possible in this equipment gives the activated aeration necessary to speed the drying cycle. The bulletin points out the varying range of application for the Turbulaire Dispersion Dryers. Their field includes slimes, pulps and other colloids that cannot be filtered. In addition, press cakes, dewatered cake from centrifugals, insecticides, fish scrap, starch, industrial wastes and many technical chemicals all come within the reach of its adaptability. It is claimed that installation costs are very low in all sizes, which run from 75 pounds to as high as 4,000 pounds water evaporation per hour.

Pulp Men Serving Defense Industries

● Representatives of the pulp and paper industry have been chosen to serve on the National Committee for Conservation of Manpower in Defense Industries, created by the United States Department of Labor. The men selected to serve on the committee for the state of Oregon are Otto Hartwig, general safety and social security advisor for Crown Zellerbach Corporation and Rayonier Incorporated, and Miles Murray, of Rayonier Incorpoated and Crown Zellerbach Corporation.

The committee is composed of industrial safety engineers serving without pay who will offer their knowledge and experience to industries awarded defense contracts, aiding those companies in complying with safety and sanitation provisions of the Walsh-Healey act.

R. E. Donovan, chief safety engineer for the Standard Oil Company of California and regional representative for the 11 Western states for the committee, said the principal value of the committee will be to the small industries who have not found it financially possible to provide a safety engineer.

He further declared, "We know that under the present circumstances green men will be coming into factories, there will be more rush than usual and, in all probability, the hazard will increase. We want to cut down loss as much as possible to conserve workmen and keep defense industries as productive and efficient as possible."

This committee was created for the purpose of assisting the manufacturers to meet contract safety and sanitation requirements and reduce hazards. All work is of advisory nature. The Committeee has no police power and members are one-dollar-a-year men.

Two labor representative serving with Otto R. Hartwig on the advisory committee are Ralph Peoples of the C. I. O. and J. H. Lake of the A. F. of L. Deputy State Labor Commissioner William Kimsey and Allen C. Smith, safety director, state industrial accident commission and Edgar M. Burns, of the Northwest Canners Association, are also members of the advisory committee.

Special agents, all members of the Portland Society of Safety Engineers, are Kenneth R. Field, Consolidated Freightways; David H. Leche, Oregon Portland Cement Company; Miles Murray, Crown Zellerbach Corporation and Rayonier Incorporated; Donald Prairie, Northwestern Electric Company; E. D. Searing, Portland General Electric Company, and Frank Cannon, Waterfront Employers.

Niles Anderson Joins National TAPPI

● Niles M. Anderson, general superintendent, St. Regis Paper Company, Kraft Pulp Division, Tacoma, recently joined the national TAPPI organization.

Mr. Anderson is chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association.

Otto Hartwig's Father Dies in Portland

● C. S. Hartwig died at Portland, Oregon, at the age of 83 years. He is the father of Otto Hartwig, social security advisor and general safety supervisor for Crown Zellerbach Corporation and Rayonier Incorporated.

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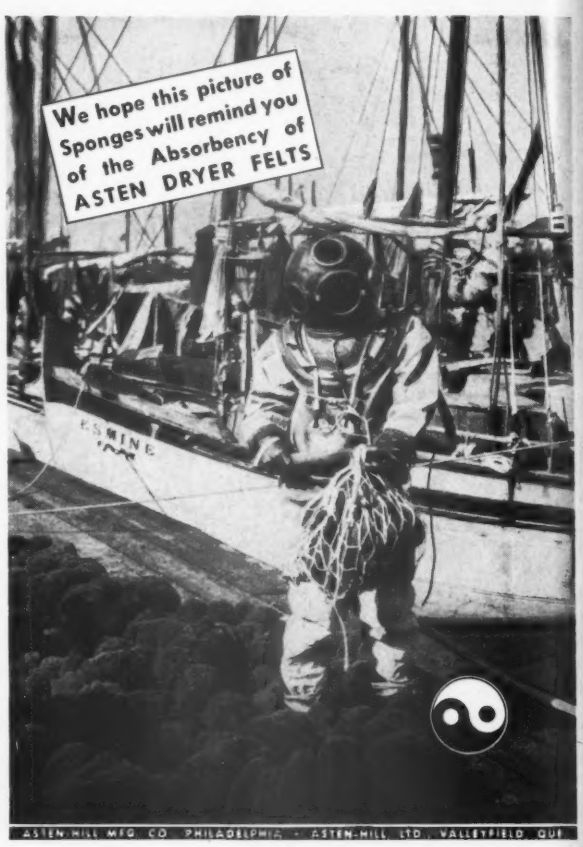
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